A 'philosophical storehouse': the life and afterlife of the Royal Society's repository

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- ABSTRACT -

In June 1781, the Royal Society's repository was transferred to the British Museum. Though ostensibly as a result of the limited space in the Royal Society's purpose-built accommodation at Somerset House, the Society were perhaps also a little relieved to relinquish a collection that had proved to be somewhat burdensome during its residence at the Society and which was frequently criticised for its decaying specimens, broken items and missing, possibly stolen, objects. However this seems to be only part of the story. Drawing upon manuscript material in the Royal Society and the British Library, this study will examine the repository's pattern of usage, collecting strategies and intellectual output throughout its life, in addition to exploring its afterlife at the British Museum using the British Museum's, Royal College of Surgeon's and Natural History Museum's extensive archives. This thesis will seek to reveal an alternative account of the Royal Society's repository arguing that it was comprised of a substantial and significant collection that the British Museum, at least initially, appears to have been grateful to receive and which, periodically, played a central role in the Society's and naturalists' work.

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- ACKNOWLEDGEMENTS -

I could not have produced this thesis without the help of so very many people who kindly gave their time to assist me. My thanks go first to my supervisor, Professor Lisa Jardine, and more generally to all at the Centre for Editing Lives and Letters, particularly Dr Robyn Adams and Dr Jan Broadway, for all their help, advice and support. Special thanks go to the Drapers Company of the City of London for funding my PhD and to the Librarians and Archivists at the Royal Society, particularly for their enthusiasm for my project and encyclopaedic knowledge of their archives. Thanks also go to the archivists at the Natural History Museum, South Kensington, the British Museum, and the Royal College of Surgeons. Many thanks also to Dr Robert Prys Jones from the Natural History Museum, Tring who advised on drafts of Chapter Five and helped with all matters ornithological.

Finally, thanks to all my family and friends, particularly Mum, Dad, Liz and Matt, without whose unwavering support and belief in me, this project would not have been possible.

- NOTES ON TRANSCRIPTION -

Whilst the aim of this study is to produce transcripts that are faithful to the originals, for ease of reading the following editorial decisions have been taken.

First, line endings have not been retained, though the end of a paragraph is marked by leaving a blank line. Second, whilst page breaks for transcriptions quoted in the body of the thesis are not indicated, a change of page number is noted in square brackets for transcripts included in the appendices.

In addition, the original spelling, punctuation and capitalisation have been retained, though for ease of reading, ‘þ’ has been silently expanded to ‘th’, the long ‘s’ has been modernised as has the usage of ‘u’ and ‘v’ and ‘i’ and ‘j’. Ampersands have been retained as have Roman numerals. Although superscript letters have been silently lowered, the contractions that they represent have been preserved.

Finally, insertions have been silently included whilst deletions have largely been omitted without comment, unless they directly contribute to the argument of this study.

- INTRODUCTION -

A 'Philosophical Storehouse':[1]

The life and afterlife of the Royal Society's repository

For historians of science, museums and collections in the first half of the long eighteenth century, the story of the Royal Society's repository is probably fairly familiar. First formerly referred to by the Society's administrative records in October 1663, it was initially curated by Robert Hooke and significantly swelled during its early life by the purchase of Robert Hubert's cabinet of rarities using a donation of £100 from Daniel Colwall.[2] Nehemiah Grew's catalogue of the collection, *Musæum Regalis Societatis*, was published in 1681, with two further editions appearing in 1686 and 1694.[3] Although initially the repository was praised,[4] by 1702 things appear to have taken a turn for the worse; the collection was portrayed as consisting of 'memorandums of mortality' and 'antiquated trumpery' by Edward Ward, whilst Frans Burman described how its magnets had been 'carelessly thrown against many of different size'.[5] Soon after, in 1710, perhaps the most damning, and most often quoted, criticisms of the repository were made by Zacharias Conrad von Uffenbach who described the majority of the collection as being 'in no sort of order or tidiness', 'covered with dust' and with parts 'utterly broken and ruined'.[6] The collection was

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[1] References to the repository and the Society more generally as a storehouse, are particularly evident in the first ten years of the repository's existence, see for example RS, Original Journal Book, vol. 4, 23 November 1671, p. 214, RS, Original Journal Book, vol. 5, 19 February 1673, p. 12 and 'Letter from Henry Oldenburg to Sir George Oxendon', London, Royal Society (RS), Original Letter Book, vol. 2, 6 April 1667, p. 1.

[2] For the Society's first reference to their repository see, RS, Original Council Minutes, vol. 1, 19 October 1663, p. 34.

[3] Nehemiah Grew, *Musæum Regalis Societatis, or a Catalogue & description of the Rarities belonging to the Royal Society & preserved at Gresham College. Made by N. Grew. Where unto is subjoined the comparative anatomy of stomachs and guts* (London: W. Rawlins, 1681) with subsequent editions published in London in 1686 by Thomas Malthus and 1694 by Hugh Newman.

[4] See for example comments made by Grand Duke of Tuscany, Cosmo III in 1669 in Lorenzo Magolotti, *Travels of Cosmo the Third, Grand Duke of Tuscany, through England, during the Reign of King Charles the Second* (London: J. Mawman, 1821), p. 188 and those made by Christiaan Huygens in 1689 discussed in Lisa Jardine, *The Curious Life of Robert Hooke: The man who measured London* (London: Harpur Collins, 2003), p. 311; both of which will be discussed in the first chapter.

[5] Edward Ward, *The London Spy Compleat, In Eighteen-Parts* (London: J. How, 1703), pp. 57-9 and J. E. B. Mayor, ed., *Cambridge Under Queen Anne* (Cambridge: Bowes and Bowes, 1911), p. 313 discussed in A. D. C. Simpson, ''Newton's Telescope and the Cataloguing of the Royal Society's Repository', *Notes and Records of the Royal Society*, 38 (1984), 187-214 (p. 191).

[6] W. H. Quarrell and M. Mare, trans., *London in 1710: from the travels of Zacharias Von Uffenbach* (London: Faber and Faber, 1934), p. 98, this is also quoted in slightly abbreviated form in Mayor, p. 365.

then transferred to purpose-built accommodation at Crane Court which was possibly designed by Christopher Wren and likely to have been partly financed using a legacy from Robert Hooke.[7] During the Society's stay in Fleet Street, it struggled to preserve its objects and, in consequence, committees were periodically set up to revive the collection's ailing state. The repository's story ends at the British Museum, where it was transferred in 1781, due to lack of space in the Society's new rooms at Somerset House.

As a collection of artificial and natural objects belonging to a scientific society, the Royal Society's repository has received a great deal of attention from various academic disciplines. However given the wealth of critical literature devoted both to the collection as a whole and its component parts, it is interesting that very little has focussed in detail on the repository's history in the later years of its life, on its transfer to the British Museum, or, more generally, on the mechanics of collecting, containing, maintaining and using the collection throughout its occupancy at the Royal Society. Michael Hunter, who has provided the most extensive accounts of the Society's museum, has tended to focus on its early years particularly 1663 to 1710.[8] Critics from various disciplines, most notably the histories of museology and science, have also incorporated a discussion of the Society's collection in their work. Ken Arnold has examined the repository as part of a study of early English Museums, whilst Eileen Hooper-Greenhill uses the Society's attempt, and ultimate failure, to construct a visual grammar of objects as part of a wider analysis of the role of museums in the construction of knowledge.[9] However, her focus on epistemology at the expense of the influence of human agency has been criticised by Marjorie Swann.[10] Julia Allen's discussion of the repository identifies that Samuel Johnson

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[7] See J. A. Bennett, 'Wren's Last Building', *Notes and Records of the Royal Society of London*, 27 (1972), 107-118 and Jardine, *Curious Life of Robert Hooke*, pp. 310-19.

[8] See Michael Hunter, 'Between Cabinet of Curiosities and Research Collection: the history of the Royal Society's "Repository"' in his *Establishing the New Science: the experience of the Royal Society* (Woodbridge: Boydell, 1989) pp. 123-155, 'The Cabinet Institutionalized: the Royal Society's Repository and its Background', in *The Origins of the Museum: the cabinet of curiosities in sixteenth- and seventeenth- century Europe*, ed. by Oliver Impey and Arthur MacGregor (Oxford: Clarendon, 1985), pp. 159-168 and *Science and Society in Restoration England* (Cambridge: Cambridge University Press 1981), pp. 66-7.

[9] See Ken Arnold, *Cabinets for the Curious: looking back at early English museums* (Aldershot: Ashgate, 2006), particularly pp. 199-202 and 217-21, Eilean Hooper-Greenhill, *Museums and the Shaping of Knowledge* (London: Routledge, 1992), pp. 133-66.

[10] Marjorie Swann, *Curiosities and Texts: The Culture of Early Modern England* (Philadelphia: University of Pennsylvania Press, 2002), p. 7.

drew on some of the descriptions in Nehemiah Grew's catalogue of the repository in his writings on zoology.[11] Examinations of the repository have also been included as part of wider explorations of specific collections such as Hugh Torrens's discussion of early geological collecting and W. N. Edwards's examination of the early history of palaeontology.[12] Both John H. Appleby and Dudley Wilson focus on the Royal Society's human rarities, whilst Ken Arnold assesses their objects of medicinal chemistry and Robert Anderson briefly discusses their instruments.[13] Individuals who have been connected to the repository have also generated much critical interest; for instance, as part of her biography of Robert Hooke, Lisa Jardine discusses his keepership of the repository and suggests that money left following his death may have partly funded the purpose-built rooms which housed the Society's collection in Crane Court.[14] J. A. Bennett examines the repository building in Crane Court proposing that Sir Christopher Wren played an influential role in its design.[15] John Appleby describes James Theobald's role in reforming the repository, particularly between 1729 and 1731 and finally D. J. Bryden explores the way in which John Gedde used the acceptance of one of his bee-houses by the Royal Society for marketing purposes.[16]

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[11] Julia Allen, *Samuel Johnson's Menagerie: the beastly lives of exotic quadrapeds in the eighteenth century* (Banham: Erskine Press, 2002), pp. 9-11. Further discussions of the repository have been included in the first volume of David Murray's, *Museums: their history and use* (Glasgow: McLehose, 1904), pp. 130-4, Stephen T. Asma, *Stuffed Animals and Pickled Heads: The Culture and Evolution of Natural History Museums* (Oxford: Oxford University Press, 2001), pp. 72-3, Giles Waterfield, 'Anticipating the Enlightenment: museums and galleries in Britain before the British Museum', in *Enlightening the British: knowledge discovery and the museum in the eighteenth century*, ed. by R. G. W. Anderson, M. L. Caygill, A. G. MacGregor and L. Syson (London: British Museum Press, 2003), pp. 5-8, Paul Grinke, *From Wunderkammer to Museum* (London: Quaritch, 2006), pp. 82-4 and Arthur MacGregor, *Curiosities and Enlightenment: Collectors and collections from the sixteenth to the nineteenth century* (New Haven and London: Yale University Press, 2007), p. 40.

[12] Hugh Torrens, 'Early Collecting in the Field of Geology', in *Origins of the Museum*, ed. by Impey and MacGregor, pp. 204-13 and 'Natural History in Eighteenth-Century Museums in Britain', in *Enlightening the British*, ed. by Anderson et al., pp. 81-91, and Wilfred Norman Edwards, *The Early History of Palaeontology* (London: British Museum Press, 1967), pp. 48-51.

[13] John H. Appleby, 'Human Curiosities and the Royal Society, 1699-1751', *Notes and Records of the Royal Society of London*, 50 (1996), 13-27, Dudley Wilson, *Signs and Portents: Monstrous births from the Middle Ages to the Enlightenment* (London: Routledge, 1993), pp. 136 and 163, Ken Arnold 'Skulls, Mummies and Unicorns' Horns: Medicinal chemistry in early English museums', pp. 74-9 and Robert Anderson, 'The Status of Instruments in Eighteenth-Century Cabinets', pp. 56-7, both in *Enlightening the British*, ed. by Anderson et al.

[14] Jardine, *Curious Life of Robert Hooke*, pp. 310-319.

[15] Bennett, pp. 107-118.

[16] John Appleby, 'James Theobald, F.R.S. (1688-1759), Merchant and Natural Historian', *Notes and Records of the Royal Society of London*, 50 (1996), 179-89 (p. 180) and D. J. Bryden 'John Gedde's Bee-House and the Royal Society', *Notes and Records of the Royal Society of London*, 48 (1994), 193-213.

The numerous histories of the Royal Society provide short accounts of its repository. Henry B. Wheatley briefly describes the museum's early history in addition to recalling an anecdote of an object recorded in Grew which became detached from the repository and was acquired via private sale by Sir Victor Brooke.[17] Similarly, Thomas Sprat and Henry Lyons mention the setting up of the repository and its life in the late seventeenth century; the latter also refers to its transfer first to Crane Court and then to the British Museum, in addition to discussing some of its key donors, such as the Winthrop family.[18] The *Record of the Royal Society* also provides a summary of the repository, as does Charles Weld's two volume history which goes on to discuss the Hudson's Bay Company's donations to the Royal Society.[19]

Amongst all these accounts is a preoccupation with the early years of the repository; specifically its setting up, associations with Hooke, purchase of Robert Hubert's cabinet, Daniel Colwall's benefaction, the association between the repository and its early Fellows and its removal to a purpose-built house in 1710. Although there is discussion of the later years, most notably in the work of A. D. C. Simpson, whose search for Newton's reflecting telescope provides a particularly detailed view of the repository in the 1730s, there remains a huge imbalance, particularly in terms of detail, between accounts of the earlier and latter years.[20] There is also a concentration on the poor condition of the specimens, which led Richard Altick to conclude that 'it is doubtful if the nation gained much when the decrepit

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[17] Henry B. Wheatley, *The Early History of the Royal Society. Read at the Meeting of the Sette of Odd Volumes held at Limmer's Hotel on Friday 2nd of November, 1894* (London: privately printed, 1905), p. 31.

[18] Thomas Sprat, *The History of the Royal Society of London for the Improving of Natural Knowledge* 3, (London: J. Martyn, 1667), pp. 251-2 and Henry Lyons, *The Royal Society 1660-1940: A History of its Administration under its Charters* (Cambridge: Cambridge University Press, 1944), see particularly pp. 94-5, 141-2, 150 and 210.

[19] Henry Lyons, ed., *Record of the Royal Society* (London: Royal Society, 1940), pp. 33-5 and the second volume of Charles Richard Weld's, *A History of the Royal Society with Memoirs of the Presidents compiled from authentic Documents* (London: J. W. Parker, 1848), pp. 83-4 and 119-126.

[20] Simpson, pp. 187-214. See also H. W. Robinson's examination of the Society's administrative staff, which includes references to the repository's keepers in 'The Administrative Staff of the Royal Society, 1663-1861', *Notes and Records of the Royal Society of London*, 4 (1946), 193-205 (p. 191) and A. E. Gunther who has written on the transfer of the repository as part of a wider exploration of the relationship between the Royal Society and British Museum in 'The Royal Society and the Foundation of the British Museum, 1753-1781', *Notes and Records of the Royal Society of London*, 33 (1979), 207-216 (p. 212). Most recently, Neil Chambers discussed the end of the repository's life and subsequent transfer to the British Museum in *Joseph Banks and the British Museum: the world of collecting, 1770-1830* (London: Pickering and Chatto, 2007), pp. 22-3.

collection was presented to the British Museum in 1779'.[21] Fortunately, Michael Hunter has criticised Altick for this view arguing that Uffenbach's comments were made during a transitional period in the repository's life as it waited to be transferred to purpose-built accommodation in Crane Court.[22] However, he too is realistic about the repository's condition given the committees periodically set up to rectify its state during the eighteenth century. Finally, few critical accounts of the repository consider in detail patterns of collecting and usage of objects, or reflect on the repository as a site or location; all of which will be considered in subsequent chapters.

Building on these existing critical narratives, this study aims to provide a more detailed account of the repository's life at the Royal Society and its fate once it was incorporated into the national collection. It will draw on the extensive manuscript material held by the Royal Society's archives that contains information regarding the repository. Of particular concern will be the Society's 'Council Minute' and 'Journal Books'. The 'Council Minutes' are particularly useful in detailing the administrative protocols applied to the repository and issues that arose as part of its day-to-day running. The Society's 'Journal Book' records the occurrences of the Society's weekly meetings. Generally, new accessions to the repository would be presented at these meetings and recorded in the 'Journal Book' accordingly. Fellows would be given the opportunity to inspect and discuss items and assess whether any special requirements were needed to maintain or display them. When single donations consisted of large quantities of objects, lists would be compiled of the specimens given and read aloud at the weekly meeting. On occasion, these lists would be copied into the 'Journal Book', though not consistently. The 'Journal Book' also records how some of the repository's objects participated in the Society's observation and experimental activities. The Society's 'Register Book' volumes also provide information on the use of the repository, both as a collection of objects and as a location. The Society's 'Account Books', 'Letter Books' and the recently discovered 'Hooke Folio', which contains Robert Hooke's rough minutes of the Society's meetings during his term as secretary and notes he made in preparation for writing a history of experimentation at the Society, will also feature in this study, in addition to unbound manuscript inventories of the collection and the repository committee's

[21] Richard Altick, *The Shows of London* (Cambridge, Mass.: Harvard University Press, 1978) p. 14.
[22] Hunter, 'Between Cabinet of Curiosities and Research Collection', p. 154.

meeting minutes from 1729 to 1734. Printed material will also be used as part of an analysis of the repository including guide books that detail the scope of the repository's holdings, naturalists' works, which provide an examination of its objects and *Philosophical Transactions*, which makes numerous references to the Society's collection. However, because the repository is not directly discussed consistently in either printed or manuscript sources during its life, this study also relies on what are at times asides or allusive comments to the collection made by the Society and various naturalists and commentators, which it will attempt to piece together in order to revisit and augment existing accounts of the repository's history.

The first three chapters will assess the life of the repository by looking in turn at its history, collecting strategies and pattern of usage, whilst the final two chapters will consider the repository's afterlife at the British Museum, in particular, what happened when it was transferred to the national collection, how the objects were incorporated into the Museum's documentation systems and whether it is possible to trace any of the repository's former items. More specifically, the first chapter will pose the question of whether the Society's collection provided a safe and lasting repository by revisiting the collection's history and key events between 1663 and 1781. Particular attention will be paid to the preservation of the collection and the shifting perceptions of the repository amongst those who viewed it. It will begin by considering the period from 1663 to 1703 and assess the ways in which the Society effectively effaced Robert Hubert from the memory of the collection purchased from him and also attempted to assimilate or 'rewrite' his former objects into a more scientific dialogue via Nehemiah Grew's published catalogue. The chapter will also examine the years 1704 to 1767, discussing the Society's problem with accommodation following Hooke's death, the tensions which emerged as a result of their decision to move to Crane Court, and the financing of the purpose-built accommodation erected to house the repository. An indication of the scope of the repository's collection will be provided, in addition to exploring the repository's various audiences' opinions of its museum. Finally, the chapter will turn to the end of the repository's life, from 1768 to 1781, when a more rigorous, though possibly not altogether successful, attempt was made to preserve and maintain the specimens in the collection. The chapter will conclude with an assessment of the rationale behind the transfer of objects to the British Museum.

The second chapter will focus on the Society's collecting strategies by examining the various methods employed to accumulate objects, in addition to assessing their efficacy. It will begin by considering what the Society's Fellows thought the repository ought to contain and how this compared to the cabinets of curiosity which directly predated the collection. Drawing a distinction between proactive and reactive approaches to collecting, the chapter will also examine the numerous collecting strategies employed during the repository's early years from 1663 to 1703. It will then turn to the period 1704 to 1768 when the Society relied largely on unsolicited donations and also had to contend with increasing competition for specimens, not least from the cabinet of their own president Sir Hans Sloane, upon whose collection the British Museum was founded. Finally, the chapter will focus on the end of the repository's life, from 1768 until 1781, when the collection was transferred to the British Museum. This period will be viewed as witnessing a reorientation in the Society's approach to collecting. Through agreements with the Hudson's Bay Company, which secured an annual donation of specimens, and via a high profile exchange with the King of Spain's cabinet, the Society began to accumulate large quantities of specimens, and developed relationships with donors that, crucially, encouraged repeat donations and some of which continued when the repository was incorporated into the national collection.

The third chapter will examine the repository's pattern of usage throughout its life and the changing contribution it made to the scientific activity of the Society. It will assess the repository's involvement in the work of the Society in two relatively distinct ways; first as a collection of objects and second as a site or location where science could be practised or performed. It will consider the objects which made up the collection and assess both the way in which the outward state or physical makeup of items given to the Society would be in some way altered in order to generate knowledge and the way in which the majority of the collection was treated, specifically that specimens would be filed away in the repository without resorting to invasive or destructive processes. It will also assess the collection's participation in studies of comparative anatomy and the way in which a small number of its items functioned as exemplar specimens in various naturalists' publications. The repository's relationship to contemporaneous private and civic collections in London will also be explored, in addition to reflecting on the ways in which the repository's

‘publick’ engaged with its objects. The chapter will also examine the use of the repository as a site or location; first, it will consider the repository as an attraction where dignitaries and important visitors to the Society could be entertained and secondly, as a space which provided a place to conduct experiments, or perhaps more accurately to perform experiments, particularly when space was at a premium. Finally, it will assess how the positioning of the repository in relation to the Society’s meeting room and library may have impacted both on its pattern of usage and the way in which it was viewed by the Fellows.

On the subject of the repository’s afterlife, the fourth chapter will investigate the fate of the repository’s objects upon entering the British Museum. It will begin by examining the scope of the collection donated to the British Museum before briefly assessing the objects that remained at the Society. The bulk of the discussion will focus on what might have happened to the various branches of natural history which passed into the possession of the national collection. It will become apparent that, with the exception of the repository’s botanical material, whilst a great deal of its collection suffered from the preservation issues which affected much of the British Museum’s early holdings, equally challenging to the objects’ existence was the fact that many fell into the category of being outdated and archaic, with large sections viewed as not appropriate to be displayed in a Museum that exhibited objects which tended to the amusement and instruction of the public. Consequently, it will be suggested that by 1809, the sections of the collection that had not already been destroyed would have been sold to the Royal College of Surgeons for use in their anatomy lectures and teaching. The repository items that still form part of both the Royal College of Surgeon’s and British Museum’s collections will then be examined and will be complemented by an analysis of why it is so problematic to identify objects with Royal Society associations using a case study of four botany specimens. The chapter will conclude by briefly exploring the other routes by which objects may have escaped the repository.

Finally, the fifth chapter will attempt to uncover the British Museum’s early documentation practices since, as will become apparent in the fourth chapter, one of the major impediments to successfully identifying which, if any, of the former Royal Society specimens survived, is the lack of a paper trail that can be traced backwards

from the present day to the repository's donation. Understanding what information was contained in catalogues, inventories and visitor guides regarding the Museum's holdings, and crucially what was omitted, will add a further dimension to the diagnosis of what went wrong when the repository was incorporated into the national collection and will provide a more rounded view generally of the repository's fate. The chapter will discuss how information was organised within the Museum from 1781, when the Royal Society's holdings were incorporated into the national collection, to 1836, following the publication of the second *Report from the Select Committee on the condition, management and affairs of the British Museum*. It will begin by assessing what documentation systems were in place when the repository was transferred to the British Museum in 1781, before examining how these systems developed into the nineteenth century until 1816 and how and whether the former repository's objects were incorporated and referred to in these. The documentation of the Museum's avian holdings will then be employed as a case study, to ascertain how documentation changed between 1817 and 1837, when new measures were introduced following the Select Committee's report and how the extent to which the Society's former specimens featured in these.

The aim throughout is to suggest that, notwithstanding the myriad problems the Society experienced in preserving the repository's objects during the eighteenth century, this does not negate the fact that the Society's museum was comprised of a substantial collection that periodically played a significant role in both the Royal Society's and naturalists' work alike and which the British Museum, at least initially, appears to have been grateful to receive. In addition to an analysis of the scope and importance of the collection, the shifting relationship between text and objects emerges in each chapter's discussion. For example, although initially books and objects were treated as being equally important, and that the two were necessarily mutually defining, increasingly the printed word appears to have taken priority over objects. Text was also an important tool in documenting the collection and mediating a visitor's engagement with the repository's objects. Furthermore, and perhaps ironically, the texts written to contain and disseminate information gleaned from the repository's objects outlasted the items themselves. The importance of curatorial skill and enthusiasm to the survival of the repository's collection will also become apparent, as will the effect of shifting scientific trends and, particularly in the afterlife

section, a recognition of the competing demands, needs and sentiments of the British Museum's audiences. Taken as a whole, this study aims to provide a more extensive, detailed and nuanced history of the repository than has hitherto been characterised, in addition to rendering more visible the wider social, cultural, scientific and historical narratives within which the collection is situated.

- CHAPTER ONE -

'A Safe and Lasting Repository'?
The Life and Transfer of the Royal Society's Museum

Whatsoever is presented as rare and curious, will be with great care, together with the Donor's names and their Beneficience recorded, and the things preserved for After-ages, (probably much better and safer, than in their own private Cabinets;) and in progress of Time will be employed for considerable Philosophical and Usefull purposes.[23]

In the first volume of the Royal Society's *Philosophical Transactions*, an article, which provided an account of a bladder stone given to the Society's recently formed repository, included an editorial note which promised that objects donated to the collection, together with their associations to their benefactor, would be preserved for 'after ages', in addition to being employed 'for considerable philosophical and usefull purposes'. Whilst the third chapter will examine what 'usefulness' might have meant to the Royal Society, this chapter will revisit and attempt to extend existing accounts of the repository's history and key events between 1663 and 1781 in order to ask to what extent the repository acted as a 'safe and lasting repository' as well as exploring the perception of the repository amongst its publics.

Adopting a chronological approach, the chapter will begin by considering the period from 1663, when the repository was first mentioned in the Society's administrative records, to the death of its first curator, Robert Hooke, in 1703. Particular attention will be paid to the relationship between the repository and Robert Hubert's collection of rarities, upon which the repository was founded. It will be argued that the Society not only attempted to efface Hubert from the memory of the collection, but also to assimilate or 'rewrite' the objects into a more scientific dialogue via Nehemiah Grew's published catalogue. The chapter will then examine the years 1704 to the end of 1767 following the dismissal of repository curator Emmanuel Mendes da Costa for embezzling the Society's funds. It will discuss the Society's problem with accommodation, including the tensions which emerged as a result of the Society's decision to move to Crane Court, as well as the financing of the

[23] Anonymous, 'Observables Touching Petrification' *Philosophical Transactions* 1 (1665-6), 320-21 (p. 321).

purpose-built accommodation erected there to house the repository. An indication of the scope of the collection will also be provided, in addition to exploring how the repository was perceived by its audiences. Thirdly, the chapter will turn to the end of the repository's life from 1768 to 1781, when it was transferred to the British Museum. This period will be viewed as a critical moment of change when a more rigorous, though possibly not altogether successful, attempt was made to preserve and maintain the specimens in the collection. The rationale behind the transfer of objects to the British Museum will also be assessed. The chapter will conclude by reflecting on the relationship between the Society's repository and its library, the importance of having enthusiastic individuals to maintain and improve the collection and how the repository's being part of an organisation which, unlike a museum, did not specialise in collections management might have affected its fate.

The early years of the repository, 1663-1703

On 19 October 1663, it was ordered that 'Mr Hook haue the keeping of the Repository of the [Royal] Society'.[24] Although Gresham College's west gallery was allocated to house the collection, this plan did not come to fruition immediately. In December 1664, John Pell commented that he would not donate objects to the Society until they had a 'fit repository' to keep items in.[25] Whether Pell was referring to the lack of a permanent location for the repository, after all, initially the collection was kept by Hooke in his rooms at Gresham College, or that it was comprised of a fairly small number of objects, is difficult to discern. Still, it appears that the Society were keen to rectify both these defects. By February 1666, when the Society's meetings recommenced after the plague, the repository was significantly swelled following the purchase of Robert Hubert's 'cabinet of rarities' using a donation of £100 from Daniel Colwall.[26] Hubert's cabinet was well known in London and could be viewed 'at the place called the musick house [...] at the Miter, near the West end of St. Paul's Church' for a very reasonable fee.[27] By June 1666, work was underway in the west

[24] RS, Original Council Minute Book, vol. 1, 19 October 1663, p. 34.
[25] RS, Original Journal Book, vol. 2, 28 December 1664, p. 167.
[26] See RS, Original Council Minute Book, vol. 1, 21 February 1666, p. 96, whilst for details on Hubert's collection see Hubert, Robert, *A Catalogue of many natural rarities ... collected by R. Hubert alias Forges, are dayly to be seen, at the place called the musick house ... at the Miter, near the West end of St. Paul's Church. (Rarities added by several friends, since the printing of the catalogue.)* (London: Thomas Ratcliffe, 1664).
[27] Hubert, title page.

gallery of Gresham College to repair the floor and windows in preparation for the setting up of Hubert's former cabinet and the rest of the Society's museum.[28] The repository's transfer to the west gallery was however delayed following the Great Fire of London in September 1666, as Gresham College became a temporary Exchange for the city's merchants who were displaced by the Fire. There may also have been a more general dip in enthusiasm for the repository prior to this since Henry Oldenburg commented in a letter to Robert Boyle, in February 1666, concerning the Society's plans for a repository, together with those for an observatory, laboratory and optic chamber that 'the paucity of the undertakers is such, that it must needs stick, unless more come in, and put their shoulders to work'.[29]

The collection remained under the direct care of Robert Hooke until February 1675 when at a council meeting he was ordered to move the repository to the College's north gallery.[30] Perhaps significantly, Hooke was ordered to set up the repository in the north gallery rather than the west, which nine years earlier had allegedly been fitted for the purpose. One possible reason for this may be that, at the time, the East India Company occupied the west gallery and moving the repository to it would have entailed their having to vacate the premises. Whether the repository should be housed in the north or west gallery appears to have been a source of tension as Hooke identified in his diary entry for the meeting commenting 'Society spoke about short Gallery, Library and Repository. Seemd to Quarrell'.[31] Perhaps as a result of this, the Society changed its mind and the East India Company was forced to relocate.[32] By December of that year, work began on the west or white gallery, to divide the room in two, one side for the Society's collections, the other for its books,

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[28] RS, Original Council Minute Book, vol. 1, 4 June 1666, p. 106.

[29] 'Letter from Henry Oldenburg to Robert Boyle' dated 24 February 1666 in Robert Boyle, *The Works of the Honourable Robert Boyle*, ed. by Thomas Birch, 5 vols (London: A. Millar, 1744), V, p. 350 quoted in Thomas Birch, *The History of the Royal Society for Improving of Natural Knowledge*, 4 vols (London: A. Millar, 1756-57), II, p.64.

[30] RS, Original Council Minute Book, vol. 1, 25 February 1675, p. 259.

[31] Henry W. Robinson and Walter Adams, eds., *The Diary of Robert Hooke 1672-1680* (London: Taylor & Francis, 1935).p. 149. Hunter, 'Between Cabinet of Curiosities and Research Collection', p. 140 also notes this argument, however does not appear to attribute it to a disagreement over the gallery in which the repository ought to be located.

[32] RS, Original Council Minute Book, vol. 1, 24 June 1675, p. 262, 28 June 1675, p. 264 and 21 October 1675, p. 264. There does however seem to be some confusion in the minutes over where the repository should be moved to since the scribe's entry for 24 June 1675, p.262 says that the East India Company are to vacate the north gallery. This mistake is repeated in the entry for 28 June 1675, p. 263, but is corrected to 'west' by a different hand. Birch, vol 3, records both these entries as 'west', see pp. 224 and 227.

whitewash the walls and repair the windows, doors and stairs.[33] Because of a lack of archival information, it is difficult to determine how long the repository remained in the west gallery, however by 1708, Edward Hatton described in his *New View of London* that the repository was 'on the Nly side' of Gresham College whilst the library remained on the 'S. W. side', so it is likely the Society's collection of objects was moved.[34]

Two aspects of the museum's management seem to characterise this early period. The first was the need to construct a catalogue of their repository. During the late 1660s and 1670s, orders were frequently issued to catalogue the contents of the repository.[35] However it was only in 1681 that Hubert's 'rarities', together with the wide range of donated material accumulated in the intervening years were recorded in Nehemiah Grew's *Musæum Regalis Societatis*. Grew was ordered to compile a catalogue at a council meeting in July 1678, which Hunter suggests may have been in part to diffuse the growing tension between Grew and Hooke following Henry Oldenburg's death.[36] Although, as will become apparent, Grew's catalogue did much to promote the repository to external parties, internally, further documentary measures were required in order to ensure the smooth day-to-day running of the museum. For instance, the repository was being constantly added to, so it was imperative that the inventory remained updated and additionally, from a practical point of view, Grew's printed catalogue failed to provide a way of finding objects. In December 1682, Grew became responsible for the repository and was advised of the need for 'a short catalogue of the Raritys with a method for the ready finding them out', plus a further catalogue detailing 'the Benefactors and the particulars given by them' and finally a donations book to record subsequent acquisitions.[37] A month later Grew informed the Society that he had almost completed his 'Index to the Repository', whilst by February 1688, Grew completed a further 'index'.[38] This use of the term 'index', a term perhaps more often associated with the printed word than with material culture,

[33] RS, Original Council Minute Book, vol. 1, 29 November 1675, p. 267.
[34] Edward Hatton, *A New View of London or an Ample Account of that City, In two volumes or eight sections*, 2 vols (London: R. Chiswell, 1708), I, pp. 666 and 686 respectively.
[35] See for example RS, Original Council Minute Book, vol. 1, 13 April 1669, p. 159 and 26 November 1674, p. 248.
[36] Hunter, 'Between Cabinet of Curiosities and Research Collection', p. 142.
[37] RS, Original Council Minute Book, vol. 2, 13 December 1682, p. 25.
[38] RS, Original Council Minute Book, vol. 2, 23 January 1683, p. 40 and 8 February 1688, p. 76.

may reflect the way in which the Society viewed the objects of its repository in the late seventeenth century, namely that each item represented a word of God's book of universal nature; an idea which will be explored further in subsequent chapters. Grew's indexes are no longer extant in manuscript form and neither do they appear to have been included in the final edition of his printed catalogue. In fact, there is little difference between the three editions, but for cosmetic changes such as the sizing of the text in the final edition.[39]

The second difficulty was that the Society's repository was largely comprised of Hubert's collection which prized rarity and strangeness and had more in common with the cabinets of curiosity which preceded the repository than, as the second and third chapters will describe, the cutting edge scientific research centre that Royal Society aspired to. Consequently, the Society attempted to rectify the disproportionate number of 'exotic' objects of natural history in comparison with their British counterparts by employing botanical traveller, Thomas Willisel, who was paid thirty pounds to spend a year collecting specimens native to Britain and Ireland.[40] In addition, in January 1677, the Society seized the opportunity of Robert Plot's making a survey of England to charge him with 'accommodating them with naturall curiositys […] wch he may meet with his [during his] Survey of England' in exchange for being excused from making weekly payments to the Society.[41] However the Society did not only attempt to rectify the disproportion physically by swelling their collection with British items, but also by trying to appropriate or assimilate Hubert's collection textually into a more scientific discourse. This is evident both in the manner that the purchase was recorded in the Society's administrative records and in the way Hubert's former objects were described in Grew's printed catalogue.

A distancing effect appears to be operating between the purchase of Hubert's collection and the Society. Although the Society's records initially note that

[39] Grew's catalogue was printed in 1681, 1686 and 1694.
[40] RS, Original Council Minute Book, vol. 1, 20 May 1669, p. 188 and Domestic Manuscripts, vol. 5, no date, p. 41.
[41] RS, Original Council Minute Book, vol. 1, 2 January 1677, p. 284.

the fifty pounds in cash, that were formerly presented by Mr. Colwall, be delivered out, to be added to another fifty pounds presented by the same to pay for the Collection of Rarities, formerly belonging to Mr Hubbard[42]

A reference a month later, in March 1666, seems to intimate that Daniel Colwall bought the collection and then donated it the Royal Society.

Mr Colwall had publick Thanks of the Society for the generous purchase he had made for them of so good a Collection of Natural Things for their Repository, and that this Gift should be particularly expressed where he is recorded as a Benefactor to the Society[43]

Whilst in April 1668, it was 'ordered also tht the Curator doe compleate the printed list of the Collection, bestowed by Mr Daniel Colwall on the Society, and tht this list be inserted in to the next edition of the sd History'.[44] The Society's preference for emphasising Colwall's influence at the expense of references to Hubert may have been because they wanted to highlight Colwall's benefaction both because the Society were grateful to him for his gift, which was crucial in providing the foundation of their collection, but also to solicit further funds, either from him or from other wealthy potential patrons. Still following the purchase, Hubert's former cabinet is only referred to as a collection donated by Colwall.

Hubert's effacement from the memory of the repository continues in Grew's catalogue since no references to any of the objects' former associations to his cabinet are given. Where Hubert provides donor information in his catalogue, Grew replicates this in one of two ways; either he implies that the benefactor noted by Hubert made the donation directly to the Society and not via Hubert, such as a sea curlew given by Walter Charlton and a flamingo from Thomas Povey[45] or notes previous owners referred to by Hubert's catalogue, but not that the Society went on to acquire the object from Hubert. So a rhinoceros horn given to Hubert by the Duke of Holstein is described by Grew as having once belonged to the Duke,[46] whilst the 'hornes of a

[42] RS, Original Council Minute Book, vol. 1, 26 February 1666, p. 96.
[43] RS, Original Journal Book, vol. 2 21 March 1666, p. 241.
[44] RS, 'Rough Minutes of Meetings of the Council of the Royal Society, 1666-1682', MS 629, 13 April 1668, p. 17.
[45] For Charlton's donation see Hubert, p. 6 and Grew, p. 39 and for Povey's gift see Hubert, p. 5 and Grew, p. 41.
[46] Hubert, p. 3 and Grew, p. 30.

hare', donated by the Prince Electors of Saxony are noted in a similar way.[47] It is difficult to say with certainty that Grew had access to Hubert's catalogue, if he did, then he appears to be making quite a deliberate attempt to distance the repository from its associations to Hubert. If he did not have access to the catalogue, then it is likely that he is basing the donor information he provides in his catalogue from object labels, which either do not mention Hubert or which Grew chose to omit. At whatever point the omission happened, it nonetheless took place and Hubert is a character notably absent from the dramatis personae of the repository.

This may result from a seeming perception amongst collections, perhaps particularly institutional collections, during this period that when an item was purchased, the vendor name was not required. As will become apparent in the final chapter, this practice is evident at the British Museum as late as the 1820s. One reason for this seems to be that the promise that the object and their relation to the benefactor would be preserved beyond the donor's lifetime is used to encourage donations. However, if vendor names were also to be recorded, then they too would persist which might lead some would-be donors to desire some sort of financial recompense in addition to assurances that their associations to the object would be preserved. Still, there is also an attempt to distance, possibly even sever the objects from their associations to a cabinet of curiosity in order to appropriate them into the scientific discourses and ideologies which underpinned the Society's early repository.

This idea is also reflected in Grew's catalogue. He attempts to realign the collection from the focus on the extraordinary evident in Hubert's catalogue to be more scientific by providing more detail on each specimen than Hubert, by emphasising the scientific rather than curious qualities of the objects, and via the language used to describe the specimens.[48] For example, Grew reindentifies Hubert's specimens; the most striking examples of this being the transformation of Hubert's 'giant's thigh bone', to the much less astonishing 'elephant's thigh bone'[49] and a bunch of black feathers that Hubert claims

[47] Hubert, p. 3 and Grew, p. 25.
[48] See for example Hubert, pp. 4, 5, and 12. Hunter, 'Between Cabinet of Curiosities and Research Collection' pp. 133-4 also notes this emphasis on rarity.
[49] Hubert, p. 1 and Grew p. 32.

the Emperour Mattheus, gave two thousand Rich Dollers for it, which is almost five hundred l. Sterling, it was taken out of the Treasury of Rarities at Prague, and doth exceed that which the Master of the Rarities did see of the great Turks at Constantinople[50]

but that Grew describes simply as 'a Bunch of black feathers from the lesser ash-coloured or Grey Heron'.[51] Crucially the focus is on the physical properties of a specimen and not the narrative or provenance information behind it. In Hubert's cabinet, part of the awe and wonder elicited from specimens of curiosity, was not simply their physical makeup, but the story behind them, as in the example of the emperor's feathers. However for the Royal Society, records of benefactors seem important only insofar as they will encourage further donations. Within a scientific society, the value of any object lay in its tangible qualities; the narratives it embodied, rather than the narratives external to it.

During the repository's very early years, its visitors were impressed by its state and scope. In 1669, Grand Duke of Tuscany, Cosmo III, predicted that in time 'it will be the most beautiful, the largest and the most curious, in respect to natural productions that is anywhere to be found'.[52] Twenty years later, in 1689, Christiaan Huygens was similarly complimentary following his visit to the collection describing the repository as 'a cabinet of curiosities, very full, but well kept up'.[53] Similarly a French guidebook from 1693 recommends a visit

au College de la Societé Royalle, appelle *Gresham Colledge* on vous y montrera toutes les Curiosités qu'on y a amassé en fort grand nombre.[54]

However less than ten years later, in 1702, the repository appears to have entered its first period of neglect. Simpson notes Dutch theologian Frans Burman's impressions of the repository where he describes the magnets 'carelessly thrown against many of different size',[55] whilst in 1703, parodist Edward Ward's *London Spy Compleat*

[50] Hubert, p. 10.
[51] Grew, p. 34.
[52] Magolotti, p. 188.
[53] Huygens's comments are discussed in Jardine, *Curious Life of Robert Hooke*, p. 311.
[54] François Colsoni, *Le Guide de Londres pour les estrangers ... par le moyen duquel on voit toutes les choses les plus notables de la ville, des fauxbourgs & des environs, etc* (London: the Author, 1693), p. 5.
[55] Mayor, p. 313 discussed in Simpson, p. 191.

characterised the curator as a man with 'as many Lines and Angles in his Face, as you shall find in *Euclid's* Elements' and the repository as full of 'antiquated trumpery', 'memorandums of mortality […] rusty reliques and philosophical toys'.[56]

The middle years of the repository, 1704-1768

Although initially the repository appears to have been successful in its aim to preserve its objects, by the beginning of the eighteenth century, things began to go somewhat awry. Jardine suggests that the neglect of the repository occurred following Hooke's death.[57] Notwithstanding Burman's negative comments a year earlier, Hooke's death does appear to have marked a turning point in the repository's fortunes, both in terms of the loss of objects, Jardine for example argues that during the confusion in the aftermath of Hooke's death several Fellows may have acquired objects from the repository's collection, and the deterioration generally of the collection's condition.[58] In addition, the Society's accommodation was contingent on Hooke's presence, and when he died they were asked to leave Gresham College. Although the Society's president at the time, Sir Isaac Newton, successfully negotiated that they might stay until suitable accommodation was found, perhaps this search diverted attention away from the repository. It may also have been perceived that there was little reason to rigorously maintain the arrangement of the collection when it was likely that the Society as a whole would soon relocate to an alternative location.

This is perhaps supported by the archival records from the mid 1690s to 1711, when the repository was removed to purpose-built rooms in Crane Court. Little information on the repository's development is provided beyond noting donations made to it and references to running repairs to the collection's building and cases made in 1708 and 1709.[59] In addition, and as Michael Hunter argues, this transitional period in the repository's and wider Society's existence might explain the most widely discussed, and perhaps most damning criticisms of the repository made by

[56] Ward, pp. 57-9. Ward's comments have been noted in a number of works such as Allen, p. 10, Altick, p. 14 and Hunter, 'Between Cabinet of Curiosities and Research Collection', p. 123. n. 1.
[57] Jardine, *Curious Life of Robert Hooke*, p. 311.
[58] Jardine, *Curious Life of Robert Hooke*, p. 311.
[59] RS, Original Council Minute Book, vol. 2, 3 November 1708, p. 156 and 9 November 1709, p. 163.

German traveller Zacharias Conrad von Uffenbach following a visit in July 1710.[60] Uffenbach complained that the objects 'were not only in no sort of order or tidiness but covered with dust, filth and coal-smoke and many of them utterly broken and ruined'.[61] He argued that that the repository's state was symptomatic of the 'indifference and sloth' which all public societies experience when their founding members were no longer there to set the standard.[62] Newton, Uffenbach argued, was too old and occupied with his work as director of the Royal Mint to have much time to devote to the Society, whilst the secretary, Sir Hans Sloane, was diverted both by his work as a doctor and his own collection to be concerned with the Society's repository.[63] This is perhaps a slightly unfair assessment of the situation, particularly in the case of Sloane who made numerous donations to the repository and by 1730 sat as part of the committee to rectify its state. However, as will be discussed later, Sloane's cabinet could be argued to have had a negative effect on the repository's fortunes.

In November 1710, four months after Uffenbach's comments, in his capacity as Royal Society president, Sir Isaac Newton, called an extraordinary meeting to discuss the Society's purchase of Edward Browne's house in Crane Court, Fleet Street to accommodate their meeting room, library and repository.[64] He argued that Fleet Street was an ideal location because it was more central than Gresham College and so more convenient for those coming from both sides of London, in addition to its proximity to the Royal Exchange. Although the sale was agreed to by those at the meeting, the move was not without its critics. Part of the premise for obtaining new rooms was the precarious position of the Society at Gresham College since Hooke's death. However an anonymous pamphlet printed in 1710 suggested that the professors of the College were happy for the Society to 'continue long to enjoy the same accommodation'.[65] As well as there being no pressing need to move, the pamphlet argued that the proposed site was too small to accommodate the Society's needs 'in its

[60] The earliest of these seems to be Emmanuel Da Costa's manuscript notes (c.1785) London, British Library (BL), 'Anecdotes, by E, Mendes da Costa', BM ADD 29867, fol. 196^{r}. See also Altick, p. 14 and Hunter, 'Between Cabinet of Curiosities and Research Collection', pp. 153-4.
[61] Quarrell and Mare, p. 98, this is also quoted in slightly abbreviated form in Mayor, p. 365.
[62] Quarrell and Mare, p. 98.
[63] Quarrell and Mare, p. 99.
[64] Anonymous, *An Account of the Late Proceedings in the Council of the Royal Society in order to remove from Gresham-College into Crane-Court, in Fleet Street* (London: J. Morphew, 1710), p. 4.
[65] Anonymous, *Account of the late proceedings*, p. 5.

present circumstances, much less in the flourishing state it was once in', and that they hoped to be in once again.[66] Furthermore, since the extraordinary meeting to discuss the move had been organised at short notice, it was suggested that it be adjourned until St Andrew's Day or at least a day which afforded members more notice to attend.[67] This proposal was rejected and seemingly only a small number of Fellows had the opportunity to vote. Clearly there was disagreement, but the purchase went through regardless and by January 1711, a committee was set up 'to consider of the placing the Library and Repository in Crane-Court'.[68]

A lack of space in the new accommodation necessitated that the repository be built over the stable block,[69] which was set in 'a little paved Court' behind the main house at Two Crane Court in Fleet Street.[70] In June 1711, keeper of the repository, Henry Hunt, was instructed to transfer the repository to Crane Court.[71] However, the new building was not ready until April the following year when finally a committee was appointed 'to take care of the due placing of the Curiosities in the new Repository'.[72] Although Richard Waller was responsible for overseeing the construction of the new building, J. A. Bennett argues that Sir Christopher Wren played an influential role in its design and construction.[73] He suggests that whilst Wren had a 'behind the scenes' involvement as a point of contact with the workmen building the repository and by his checking the accounts, it is highly likely that he was also responsible for the design of the repository (see figure 1).[74] The resulting structure, as John Macky described in his *Journey Through England*, was 'a theatrical building, resembling that of Leyden in Holland'.[75] This means that the design also had a connection to Hooke since, as Lisa Jardine notes, Hooke designed the theatre for the

[66] Anonymous, *Account of the late proceedings*, p. 14.
[67] Anonymous, *Account of the late proceedings*, p. 8.
[68] RS, Original Council Minute Book, 20 January 1711, p. 184.
[69] Anonymous, *Account of the late proceedings*, p. 14.
[70] Lisa Jardine, *On a Grander Scale: The outstanding career of Sir Christopher Wren* (London: Harpur Collins, 2002), p. 437. The original reference is from John Macky, *A journey through England in familiar letters from a gentleman here, to his friend abroad*, 2nd edition (London: J. Hooke, 1722), p. 259.
[71] RS, Original Council Minute Book, vol. 2, 26 June 1711, p. 190
[72] RS, Original Council Minute Book, vol. 2, 8 April 1712, p. 201.
[73] Bennett, pp. 107-118.
[74] Bennett, pp. 113-5.
[75] Macky, p. 260.

Royal College of Physicians at Leyden.[76] She goes on to argue that a bequest from Hooke's will partly financed the building of the new repository.[77]

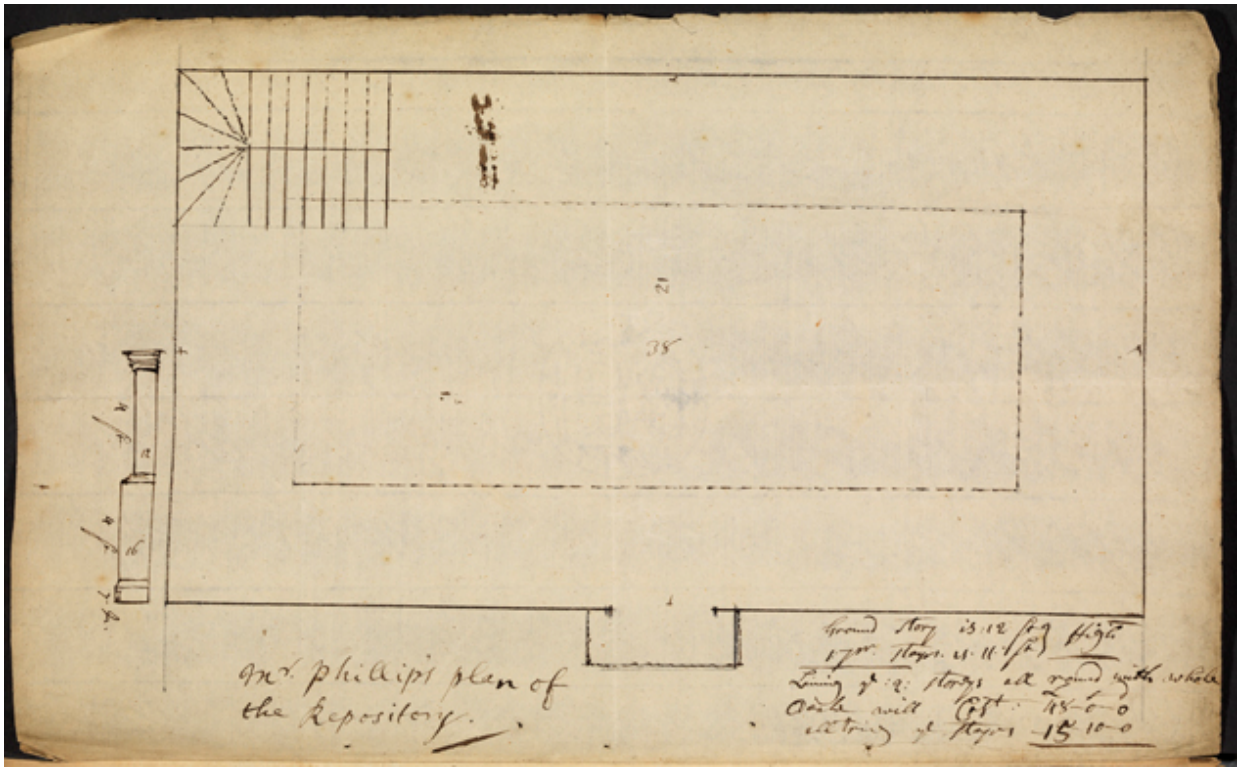

Figure 1: Plan of Repository drawn c. 1730 reproduced with the kind permission of the Royal Society of London.[78]

Notwithstanding the receipt of funds from Hooke, Bennett suggests that given the Society's limited financial resources, it is probable that the design was amended in consultation with Wren.[79] This did not however prevent the Society from overspending on the building; initially Richard Waller budgeted £200 for the repository's accommodation, but costs escalated to £400, not least because Waller authorised the building of an 'additional cellar and ornaments beyond what was intended'.[80] The Society agreed to contribute £300 and Waller was required to pay the balance of £100. This overspend may go some way in explaining the Society's

[76] Jardine, *On a Grander Scale*, p. 438.
[77] Jardine, *On a Grander Scale*, pp. 437-8.
[78] Plan of repository from RS, Committee Minute Book, vol. 63, no pagination. This is also reproduced in Bennett, plate 15.
[79] Bennett, p. 114.
[80] RS, Original Council Minute Book, vol. 2, 12 June 1711, p. 192 and 8 April 1712, p. 201.

keenness that 'Mr Waller […] lett the cellar under the Repository for as much as he can' as a way for them to generate further revenue.[81]

No mention is made of who the cellar's first tenant was, but it appears that they did not pay their rent as Waller and John Harwood were ordered to let the cellar in January 1713 and 'make an agreement about the last tenant'.[82] The agreement seems to have resulted in the seizure of the first tenant's goods left in the cellar in lieu of rent with a view to their being sold together with a renewed attempt to let the cellar which commenced in August 1713.[83] The second occupant was a cheesemonger named Samuel Clements who signed a seven year lease at 'the Rent of five pounds per annum'.[84] This was perhaps not the best choice of lessee given the rather pungent aroma emitted from the shop to the repository above and which led to a number of complaints being directed to Newton, regarding the 'the ill scent of the Goods lodged in that Celler'.[85] It was decided that Clements should be removed upon expiration of his lease in November 1720, however clearly this proved problematic since the Society's wranglings with the Cheesemonger continued and it was only some three years later, in December 1723, that the premises were finally vacated.[86]

Unlike the first decade of the eighteenth century, the Society appears to have become more receptive to the need for maintaining the condition of the repository's collections. At a meeting in July 1713, Dr John Thorpe presented a tarantula to the Society, which had been 'put up in a box or case between two Glasse Plates to preserve them from mites and other injures'.[87] The Society judged this 'a very good method of preserving Insects and small Animals' and they asked that Thorpe, Waller and Alban Thomas, successor as keeper of the repository following Henry Hunt's death in 1713, might identify other specimens in the repository to be prepared in the

[81] RS, Original Council Minute Book, vol. 2, 8 April 1712, p. 201.
[82] RS, Original Council Minute Book, vol. 2, 29 January 1713, p. 205.
[83] RS, Original Council Minute Book, vol. 2, 24 August 1713, p. 212.
[84] RS, Original Council Minute Book, vol. 2, 19 November 1713, p. 213. Clements's first payment is recorded in RS, Account Book, vol. 1, 4 November 1714, no pagination.
[85] RS, Original Council Minute Book, vol. 2, April 14 1719, p. 248. Simpson also discusses the cheesemonger, p. 210, n.37.
[86] RS, Original Council Minute Book, vol. 2, 24 October 1723, pp. 273-4. An entry in RS, Account Book, vol. 1, 10 November 1724, no pagination, in detailing Clements's final payment confirms that it was 'at Xmas 1723 [that] … he quitted the Cellar under the Repository'.
[87] RS, Original Journal Book, vol. 11, 2 July 1713, p. 372.

same way.[88] Although the 'Account Book' records that Thomas bought glasses to preserve the insects in,[89] it appears that Thorpe's method did not prove successful given that a report from February 1734 described the insects as 'broken to pieces'.[90] In July 1714, Waller was asked to be the repository's inspector. Although no reports are apparent in the Society's administrative records regarding his findings, this is perhaps unsurprising given that he died a year later. In a similar way to previous years, a key concern was the need to compile a catalogue of the repository's holdings. Thomas was required to construct catalogues of the library and repository.[91] He began with the library catalogue and seemingly failed to produce an equivalent record of the repository since a later library inspection committee found his library catalogues, but not that of the repository.[92] The lack of a catalogue for the repository may have been due to Thomas's unexpected departure in January 1722; a disappearance which Simpson suggests may have been associated with Thomas's Jacobite sympathies.[93]

The collection appears to have been in a sufficiently fair condition that eleven of the illustrations in Richard Bradley's *A philosophical account of the works of nature*, published in 1721, were based on Royal Society specimens.[94] Moreover, in the second edition of Henry Curzon's *The Universal Library*, not only was the repository ranked as one of the sixteen 'chief repositories of rarities throughout the universe', it was ranked first and was accompanied by a partial reproduction of Grew's catalogue.[95] It is perhaps significant, however, that the repository is described as being located in Gresham College rather than Crane Court, which suggests that the second edition of Curzon's work reproduced information contained in the first edition,

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[88] RS, Original Journal Book, vol. 11, 2 July 1713, p. 372. See RS, Original Council Minute Book, vol. 2, 7 December 1713, pp. 215-7 concerning Thomas's appointment.
[89] RS, Account Book, vol. 1, 3 August 1713, no pagination.
[90] RS, Original Council Minute Book, vol. 3, 18 February 1734, p. 136 (see appendix 1.2).
[91] The requirement that Thomas produce catalogues is evident in RS, Original Journal Book, vol. 11, 9 July 1713, p. 373; a request that was renewed in RS, Original Council Minutes, vol 2, 14 April 1719, p. 247.
[92] RS, Original Council Minute Book, vol. 2, 23 June 1723, insert between pp. 271 and 272.
[93] RS, Original Council Minute Book, vol. 2, 17 January 1722. Simpson, p. 193 provides further discussion of Thomas's departure. By 14 March 1723 an article in the *Daily Journal* noted that a warrant had been 'issued against a Welch Gentleman belonging to the Royal Society's repository in Crane Court, Fleet Street', see Anonymous, 'London, March 14', *Daily Journal*, 14 March 1723, p. 1.
[94] Richard Bradley, *A philosophical account of the works of nature, endeavouring to set forth the several gradations remarkable in the mineral, vegetable, and animal parts of the creation, tending to the composition of a scale of life* (London: W. Mears, 1721), see plates iv, viii, ix, xii, xxiv, xxv and xviii.
[95] Henry Curzon, *The Universal Library: or compleat summary of science. Containing above sixty select treatises. In two volumes*, 2nd edn, 2 vols (London: T Warner and J Batley, 1722), I, pp. 438-58.

rather than revisiting the collection. However the first edition was published in 1712, and also cites the repository as being located in Gresham College, so seemingly it too was out of date when it was published.[96] Although it might be argued that a visit was made to the repository whilst it was still at Gresham College and before the decision to move to Crane Court had been made, such a visit would have been contemporaneous with Uffenbach's viewing of the collection and it is unlikely that Uffenbach would have found the Society's museum to be one of the 'chief repositories of rarities' in Gresham College, let alone the universe. This perhaps suggests that Curzon's appraisal of the repository was based not on having made a recent physical journey to the repository, but either on a much earlier visit, or someone else's account of a visit. Alternatively, and perhaps more likely, Curzon may not have visited the repository at all, but instead chose to draw on Grew's catalogue to review the collection. This notion of audiences engaging with the collection via Grew's catalogue and its implications will be discussed in the third chapter, but suffice is to say that Curzon's is not the only text to partially reproduce Grew's catalogue to provide a sample of what might be seen at the repository, which is particularly misleading given that, by the late 1720s, much of the material recorded in Grew's catalogue was in a bad state or had perished.

In May 1723, eighteen months after Thomas's departure, Francis Hauksbee was appointed House Keeper whose role included responsibility for the Society's library and repository.[97] Attention soon returned to the state of the objects and a committee was set up to inspect the library and repository. Their resulting report identified that there was no catalogue or numbering system on the repository's objects and so they were unable to provide an account of them.[98] No hint is given as to the condition of the collection; however it is likely that it had begun to, or was on the verge of, deteriorating, given that the repository was subject to an anonymous guidebook parody, published sometime in or before 1730, and which included the guidebook's 'Country Spy' describing his disappointment at the collection.[99] In addition, by August 1729, the revived repository committee found that 'the curiosities

[96] Henry Curzon, *The Universal Library: or, compleat summary of science. Containing above sixty select treatises. In two volumes* 2 vols (London: George Sawbridge, 1712), I, pp. 438-58.
[97] RS, Original Council Minute Book, vol. 2, 9 May 1723, p. 271.
[98] RS, Original Council Minute Book, vol. 2, 23 June 1723, insert between pp. 271 and 272.
[99] Anonymous, *The Country Spy; or a ramble thro' London. Containing many curious remarks, diverting tales, and merry joaks* (London: Publisher unknown, 1730?), p. 43.

therein contained were several of them decayed, and the rest of them in Great disorder'.[100] This led the committee, whose most notable member was, perhaps, Sir Hans Sloane, to embark upon a four year project to restore the repository and its objects.

They began by considering the state of the objects; however it soon emerged that in doing so it would be necessary to contend with the dual problems of the condition of the specimens' immediate housing, specifically their casing, and the wider accommodation of the repository building. Consequently, in order to conserve the objects, the committee's initial concerns were threefold. First, was to tackle the problem of the building itself; it was newly wainscoted in deal, the walls and ceiling were repainted and whitewashed, the floor was replaced and finally, the building was supported in order to accommodate the weight of the collection.[101] Second, was the problem of the objects' cases. The committee identified that a major contributing factor to the deterioration of the collection had been the fact that specimens had to be removed from their cabinets, and thus repeatedly handled, in order to view and use them.[102] To reduce handling, it was suggested that the smaller objects such as the 'animal stones' or fossils and shells be affixed to boards covered in glass and then inserted in drawers and if their size precluded this placing, they should be placed in glass fronted cabinets.[103] These cabinets appear to have been custom made with sliding glass doors rather than doors that opened out into the room.[104] Finally, it was essential to attempt to preserve the material that could be saved. In an attempt to conserve the objects, a number of independent contractors or 'skilful persons' were employed to clean and mend the specimens, whilst some items, such as the parts of animals, shells and bones were varnished to further protect them.[105]

Sloane's collection was hailed as an exemplar that might aid in the difficulties that the committee were experiencing in arranging and preserving the repository's

[100] RS, Original Council Minute Book, vol. 3, 20 August 1729, p. 28.
[101] RS, Committee Minute Book, vol. 63, 25 June 1730, p. 18 and 30 July 1730, p. 24. This is summarised in a 'Report of the Committee for Examining the State of the Repository' copied into the RS, Original Council Minute Book, vol. 3, 2 November 1731, p. 98, (see appendix 1.1).
[102] RS, Committee Minute Book, vol. 63, April 30 1730, p. 10.
[103] This summarised in a report of the committee from 7 May 1730 copied into RS, Original Council Minute Book, vol. 3, 9 May 1730, p. 47.
[104] RS, Committee Minute Book, vol. 63, September 3 1730, p. 29.
[105] RS, Original Council Minute Book, vol. 3, 9 May 1730, p. 47 and 2 November 1731, p. 98.

holdings. Consequently, in May 1733, the repository committee arranged to visit Sloane's cabinet to 'view the manner of the preserving & ranging the severall sorts of curiosities in his collections that they might the better judge what may be proper to be order'd in the Repository'[106] It appears that the committee found the visit useful as they were inspired to order 'that Mr Jackson should be sent to, & desired to repair & put the mummy belonging to the RS into the same sort of case as the mummy at the president's, only without casters.'[107] As will become apparent, Sloane's museum surpassed the repository not only in terms of its preservation and display techniques, but also in the scope of the collection. As the second chapter will identify, Sloane's collecting networks appear to have been more efficient than the Royal Society's. Furthermore, the third chapter will note that Sloane frequently displayed new additions to his own collections at the Royal Society's weekly meetings and when examples of items were required to augment descriptions and observations sent by the Society's various corresponding agents, it was from Sloane's cabinet, in addition to the repository, that these objects were sourced.

[106] RS, Committee Minute Book, vol. 63, 8 May 1733, p. 60.
[107] RS, Committee Minute Book, vol. 63, 8 May 1733, p. 60.

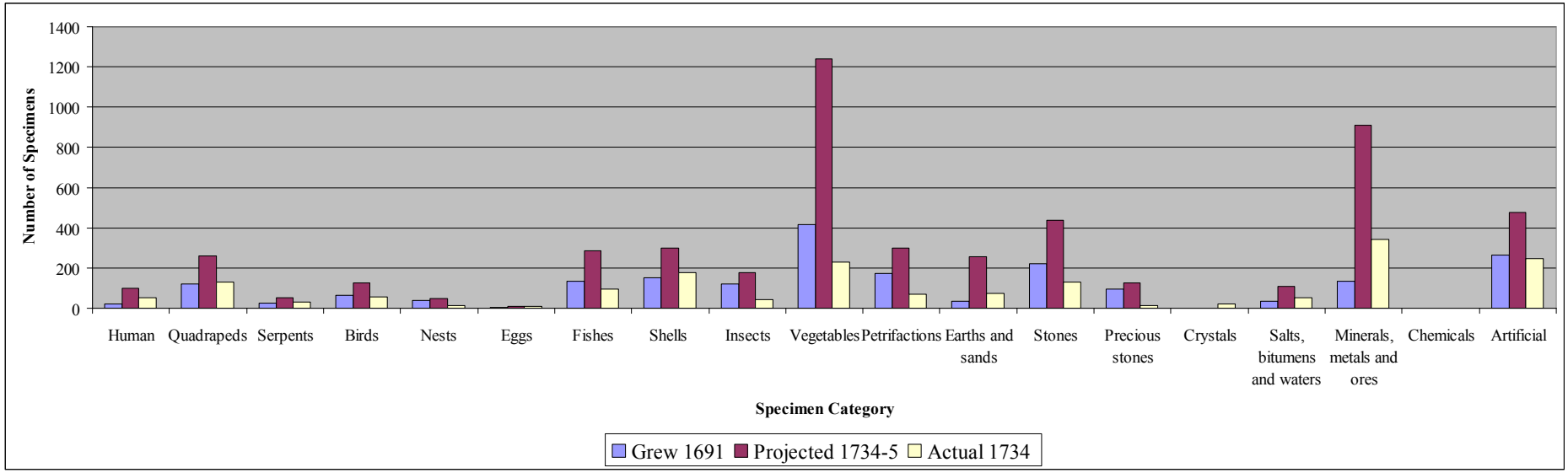

Figure 2: Graph comparing the Society's collection according to Grew and the projected and actual figures in 1734

In addition to conserving the collection, the committee also intended to produce an inventory of the objects. Since there was no accurate pre-existing catalogue, other than Grew's printed version compiled fifty years earlier, the committee extracted the donations recorded in the 'Journal Book' together with the objects recorded in Grew in order to construct what could be termed as the repository's projected holdings.[108] A comparison between the projected and actual holdings is telling (see figure 2).[109] For all classes of objects, the projected number of specimens far exceeds the actual number. The number of objects in the various classes according to Grew's catalogue is also plotted on the graph and frequently the number of specimens in Grew are greater than or roughly equal to the actual number of specimens a little over fifty years later. In fact, of the 5217 objects that the repository should have contained, just a fraction of these, only 1775 were found in 1734; perhaps surprisingly approximately one hundred less than were contained in Grew's original catalogue. A committee report described that three things occurred to the objects; they were either lost, embezzled, or in such bad condition that they had to be disposed of.[110] Of particular surprise to the committee was that 'so many curious specimens of oriental and other precious stones in the lists of Donations, [were] not to be found in the Repository, notwithstanding their most diligent search'.[111] This also seems to support Uffenbach's claim, discussed earlier, that when he asked to see specific items, they were nowhere to be found.

Having conserved the items, renewed their casing and refurbished the repository's building, the committee's attention turned to the future of the repository. They were keen to diagnose the problems which had led to the repository's demise and set in place procedures to ensure its continuance for future years. Allied to this was the need to induce more benefactors to donate objects in order to begin to rebuild the Society's collection. That meant that they had to demonstrate 'that there will be

[108] The order to produce this is in RS, Original Council Minute Book, vol. 3, 2 November 1731, p. 98 and see 'A Complete Catalogue of Donations extracted from the Journal Book', MS 416 for the resulting list.
[109] See RS, MS 416 for the projected collection and RS, Committee Minute Book, vol. 63 for the actual number of objects in the collection. Please also note that the repository's actual holdings are provided in tabulated form in RS, Original Council Minute Book, vol. 3, 18 February 1734, p. 134, however the entry for birds, eggs and nests has been miscopied from the original.
[110] RS, Original Council Minute Book, vol. 3, 18 February 1734, p. 134.
[111] RS, Original Council Minute Book, vol. 3, 18 February 1734, pp. 134-5.

proper care taken hereafter to preserve them in good condition'.[112] The committee's hope was that the care and expense that had been taken in reviving the repository might contribute to demonstrating the Royal Society's commitment to preserving objects for the future. They believed that this might encourage interested parties to offer to replace some of the objects that had formerly been part of the repository, and which through neglect had been destroyed. In addition, they hoped that

> Others may be induced to deposite their Collections here, as a sure means of rendering them usefull to the Publick: and will have the satisfaction to know that what they have collected with so much industry and expence, will here remain safe and entire.[113]

The notion of remaining 'safe and entire' was clearly retained from the Society's original mission statement that the collection would be preserved for 'after-ages'. In contrast, the idea of being 'usefull to the publick' is a slight reorientation of purpose in comparison with the initial suggestion of its being used for 'considerable usefull and philosophical purposes'.

With respect to the preservation of the collection, the committee emphasised the need to combat the problems of loss, embezzlement and deterioration which so greatly contributed to the startlingly reduced number of specimens in the repository. To preserve the condition of the objects, one of the main issues was to contend with the problem of damp by ensuring that the repository remained dry; the committee recommended adding windows or skylights, building a new chimney and lighting a fire each day during the winter in the repository and not just on meeting days.[114] It appears that the final of these recommendations was acted upon and the Society's housekeeper was 'allowed the expence of firing for the chimney in the Repository from the first of October to the last of March every year'.[115] To tackle the problems of loss and embezzlement, the committee recommended that everything be locked in glass cabinets or drawers and that valuable items would only be shown in the presence of the repository's keeper or, in his absence, one of the Society's Fellows. Six months later, the President requested that Dr Mortimer liaise with the joiner in order to set up

[112] RS, Original Council Minute Book, vol. 3, 18 February 1734, p. 139.
[113] RS, Original Council Minute Book, vol. 3, 18 February 1734, p. 139.
[114] RS, Original Council Minute Book, vol. 3, 18 February 1734, p. 137.
[115] RS, Original Council Minute Book, vol. 3, 16 September 1734, p. 144.

presses with locks in the west end of the gallery.[116] Francis Hauksbee was entrusted with the keys to the cabinets and ordered not to allow them to be used by servants or for 'strangers' to open them without supervision from himself or a member of the Society.[117]

The committee also suggested that the repository ought not to be used as a thoroughfare for the family who lived in the Society's house and that some sort of passage be contrived to prevent this in the future.[118] Rather belatedly, two years later, the feasibility of this request was investigated, but given that further references to this are not apparent in the Society's records, it appears that it was ultimately not acted upon.[119] Once again, the need for improved documentation systems was stressed. It was suggested that a catalogue of the repository be compiled which could be regularly appended with additions. It was further proposed that these acquisitions would be numbered in the catalogue with a corresponding number etched onto the object itself, together with a donations book which would also record each object's location in the repository. Crowell Mortimer began a catalogue and by January 1735 claimed that 'a considerable part' had been completed.[120] He then embarked on a further catalogue which was designed as a general plan of the system of classification; however this was only partially completed since it only included three classes of objects, specifically human rarities, quadrapeds and birds.[121] Neither of these catalogues appears to have been kept up to date with incoming specimens beyond the 1730s.

It was also proposed that a committee should be appointed to make an annual inspection of the repository. It is difficult to tell whether this was implemented, as the 'Council' and 'Journal Books' make little reference to it. It seems that in January 1738 the committee was briefly revived, though this enthusiasm appears to have been short lived, possibly because attention was diverted away from the repository in favour of concentrating on the library. This was possibly due to the change of president. In 1741, Martin Folkes took over the presidency from Newton and as Marie

[116] RS, Original Council Minute Book, vol. 3, 16 September 1734, p. 144.
[117] RS, Original Council Minute Book, vol. 3, 26 March 1735 p. 151.
[118] RS, Original Council Minute Book, vol. 3, 18 February 1734, pp. 139-141
[119] RS, Original Council Minute Book, vol. 3, 13 April 1736, p. 165.
[120] RS, Original Council Minute Book, vol. 3, 12 January 1735, p. 160 and RS, 'Catalogue of the Royal Society Museum', MS 414.
[121] RS, 'A General Plan of the System of Classification', MS 415/2-5.

Boas Hall identifies, he seems to have largely been interested in the library and archives of the Society.[122] In fact, Folkes compiled a catalogue of the library up to 1747.[123] Furthermore, unlike the repository, a library committee existed throughout the 1740s.[124]

By the early 1750s, the condition of the repository once again proved to be a cause for concern. In a diary entry from 23 January 1752, William Stukeley noted that Emmanuel Mendes Da Costa

> represented that foreigners of curiosity, as well as our own peoples, often desired to see our museum, which had formerly a reputation both at home and abroad. He was ashamed to recite what a ruinous, forlorn condition it was now in, and prayed it would be amended.[125]

In addition, some three years prior to the British Museum opening its doors to the general public in 1759, a Museum committee report described that it would provide a 'safe and lasting repository for curiosities of every kind' and that the want of such an institution had 'been hitherto much lamented'.[126] This statement suggests that a 'safe and lasting repository' for natural and artificial items was absent in the 1750s, even though the Royal Society's repository was still in existence at the time. The Museum's Trustees could not claim ignorance of the Society's collection since a large proportion of them were also Fellows of the Society and even if one is to accept that in part the discussion sought to justify the need for a state funded collection, still it does seem to reflect fairly negatively on the repository's condition.[127] The report went on to describe that the British Museum's collections would be useful to 'researches into any part of useful knowledge'. The ambitions of the British Museum at its founding, specifically to have a lasting repository and one that is useful, are strikingly

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[122] Marie Boas Hall, *The Library and Archives of the Royal Society, 1660-1990* (London: Royal Society, 1992), p. 9.
[123] Boas Hall, *Library and Archives* p. 13.
[124] Boas Hall, *Library and Archives*, p. 9.
[125] W. C. Lukis, ed., *The Family Memoirs of the Rev William Stukeley MD and Antiquarian and other Correspondence of William Stukeley, Roger & Samuel Gale*, 3 vols (Durham and London: Andrews; Whitaker, 1882-87), II, p. 372, also noted by Simpson, p. 199.
[126] BL, 'Papers Relating to the British Museum', BM Add 6179, fol 30^{r} (see appendix 2.1).
[127] Gunther, 'Royal Society and the Foundation of British Museum', pp. 209-10 and pp. 214-5 identifies that between 1753 and 1783, 23 of the 31 elected Trustees of the British Museum were also Fellows of the Royal Society, whilst of the 37 members of the British Museum's standing committee, only six were not Fellows of the Royal Society.

similar to those of the repository at its inception almost a hundred years earlier whose dual aspirations were to preserve material for 'after-ages' in addition to employing it for 'considerable philosophical and usefull purposes.'[128]

Although, some structural improvement to the repository appears to have been undertaken; in July 1753, the roof was repaired and two windows were added to the north side of the building, presumably in attempt to solve the problem of damp discussed twenty years earlier by the 1730s repository committee, the Society does not appear to have turned to improving the content of the collection until more than eleven years later.[129] In fact it was not until November 1763, one hundred years and one month after the first reference to the repository in the Society's *Minutes*, that a report from the repository committee regarding its state was read at a general meeting. It described how action once again had to be taken in order to revive the collection's ailing state.[130] The committee began by looking at the objects of natural history finding many of the 'animals and vegetables totally decayed and perished', describing them as 'disgraceful' and even 'pernicious' since 'the animal bodies were so decayed, and in a state of putrefaction, the air in the room became intolerably foetid, and they were all sick'.[131]

Beginning at the furthest corner of the repository, the committee proceeded to clean and put the objects into order, in addition to recording them in an inventory. The repository's curator, Emmanuel da Costa, was largely responsible for cleaning the objects which he likened to the Herculean labour of cleaning the Augean stable and commented that it was 'much beyond the eleven Herculean labours added to it'.[132] Although the committee found that many of the specimens had been destroyed by 'time and dirt', they also identified that 'a very valuable collection of the subjects of natural history' remained.[133] They noted specifically that there were 'still many good specimens of animals (amongst which are several rare fishes) and of the skeletons and

[128] Anonymous, 'Observables', p. 321.
[129] See RS, 'Rough Minutes of Meetings of the Council of the Royal Society, 1748-1759', MS 630, 26 July 1753, p. 71 and Original Council Minute Book, vol. 4, 26 July 1753, p. 129.
[130] RS, Original Journal Book, vol. 25, 17 November 1763, pp. 146-50 (see appendix 1.3).
[131] RS, Original Journal Book, vol. 25, 17 November 1763, p. 148.
[132] 'Letter from Emmanuel Mendes da Costa to the Royal Society, RS, AB/1/2/1/63, 13 September 1763, no pagination.
[133] RS, Original Journal Book, vol. 25, 17 November 1763, pp. 148-9.

parts of animals'.[134] Furthermore, although few insects had survived, shells, corals, and vegetable productions had fared well, whilst 'the ores, minerals, crystals, spars, stones and extraneous fossils, would make of themselves a fine and large collection'.[135] The committee also noted that they had 'found several valuable gold and silver ores, which were supposed to be lost, and they cannot forebear to mention, that the jaspers and other stones from Siberia are extremely beautiful and singular'.[136] The fact so many of the valuable stones remained suggests that the use of locking cabinets to prevent theft, suggested by the earlier committee, appears to have worked. However, it seems that the Society were still encountering difficulty in preserving the more perishable specimens such as the insects, though given the absence of reliable preservation techniques at the time, this is perhaps unsurprising.

Notwithstanding that a substantial amount of the collection may have perished, the repository appears to have roughly doubled in size, from 2425 objects to almost 5000 objects between 1734 and 1765, a fact which will be discussed in detail in the fourth chapter.[137] In a similar way to the earlier committee, the inspector's report from 1763 suggested that now the collection had been cleaned and arranged, it was hoped that that 'Gentlemen will be encouraged to add as much as they are able to this collection' and once again assurances were issued that any donations would be 'duely attended to, and preserved with all possible care'.[138] However, once again a shift appears to have taken place in the use of the repository as the committee described that

> A collection like yours, enriched with so many curiosities both natural and artificial, when kept clean and properly methodized, will do honour to yourselves and to your countrey: as Foreigners will view it with pleasure and speak of it with applause.[139]

[134] RS, Original Journal Book, vol. 25, 17 November 1763, p. 148.
[135] RS, Original Journal Book, vol. 25, 17 November 1763, pp. 148-9.
[136] RS, Original Journal Book, vol. 25, 17 November 1763, pp. 148-9.
[137] For the inventory of natural history see RS, 'An Inventory of the Subjects of Natural History in the Repository of the Royal Society', MS 415/1 and for the list of artificial items see 'An Inventory of such Antiquities, Machines, Models, Mathematical and other Instruments, Weapons of War, Apparel, Utensils, and curious works of Art, as are now in the Repository of the Royal Society', MS 417.
[138] RS, Original Journal Book, vol. 25, 17 November 1763, p. 149.
[139] RS, Original Journal Book, vol. 25, 21 November 1765, p. 309 (see appendix 1.4).

No mention is made of the repository being a useful tool for the Society, or its wider use to science. Rather, the committee emphasised its status as the public face of the Society; a place to be visited, or an entertaining space. The need for a scientific catalogue was renewed plus, once again, the suggestion that the specimens might be marked in some way to correspond to the catalogue, for which work keeper of the repository Emmanuel da Costa was recommended.[140] The committee planned to address the repository's artificial objects the following year in 1764; however they were prevented from conducting their survey due to essential maintenance work and repairs that were being carried out on the Society's buildings. By 1765, the committee recommenced their meetings and addressed the artificial objects. As part of this, they provided a written inventory, similar to that which they produced for the Society's natural history specimens, as well as cleaning and arranging the items.[141] Once again the need for a printed catalogue and a donations book was emphasised and, in a similar way to the natural history collection, it was recommended that the repository's keeper Emmanuel da Costa carry out the work.[142] This does not however appear to have been possible because da Costa was suspended from the employ of the Society on 10 December 1767 having embezzled £1000 of the Society's money and was dismissed the following week.[143]

The final years of the repository, 1768-1781

Following the enforced departure of Emmanuel da Costa at the end of 1767, the Society once again had to search for a keeper for their repository. In a similar way to previous curators, the expectation was that he would spend three hours a day, two days a week in the repository and be responsible for maintaining 'methodically into the Catalogue all particulars which are presented to or brought by the Society' and 'that he keep a distinct Catalogue of Benefactors and Benefactions'.[144] At the beginning of January 1768, John Robertson was appointed as keeper of the repository; the locks were changed, a benefactions book, backdated to January 1744, was commenced, and a seemingly new and more rigorous approach to the keeping of the repository emerged.

[140] RS, Original Journal Book, vol. 25, 17 November 1763, p. 150.
[141] RS, Original Journal Book, vol. 25, 21 November 1765, p.308.
[142] RS, Original Journal Book, vol. 25, 21 November 1765, pp. 309-10
[143] RS, Original Council Minute Book, vol. 5, 10 December 1767, p. 203 and 17 December 1767, p. 226.
[144] RS, Original Council Minute Book, vol. 5, 7 January 1768, p. 253.

As the second chapter will identify, from 1770, the repository's collection began to increase significantly, thanks in large part to a series of donations made to the Society by the Hudson's Bay Company. Encouraged by these donations, a committee, which was formed ostensibly to oversee the arrangement of the newly arrived objects from Hudson's Bay in the repository, set themselves the task of soliciting further donations from trading companies, heads of state and private individuals. Their work resulted in an influx of natural history specimens, particularly bird skins and insects and this together with a general increase in repeat donations and gifts of large quantities of specimens plus an annual donation of fifty cultivated plant specimens from the Chelsea Physic Garden, which began in 1722, meant that the repository's collections grew significantly in the period between 1770 and 1781. The fourth chapter will suggest that a conservative estimate of the total percentage increase of the repository's collection in the ten years prior to its transfer would have been in excess of 20%, even allowing for items which perished due to natural wear and tear and that had to be destroyed due to infestations.

Annual inspections of the repository were also implemented. However this enthusiasm was short lived. By September 1775, regular benefactor John Rheinhold Forster made a donation which 'was referred to the Inspectors of the Museum, together with Dr Solander to inspect the specimens proper for the Society and likewise report in what manner this should be preserved'.[145] Seemingly the committee did not comply with this order since a further minute, in May 1776, records

> It having been represented to the Council that the Inspectors of the Museum had neglected to take the necessary measures for the preservation of the animals lately presented to the Society by Dr Forster, ordered that the Librarian put the same animals in spirits or otherwise take proper care of them.[146]

The failure of the repository's inspectors to fulfil the task assigned to them is perhaps more significant than might at first appear. Seven days after this minute was recorded, the Society received architect Sir William Chambers's plans for the Society's proposed move to Somerset House. The allocated rooms were far from spacious and

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[145] RS, 'Rough Minutes of Meetings of the Council of the Royal Society, 1773-1779', MS 635, 14 September 1775, no pagination.
[146] RS, Original Council Minute Book, vol. 6, 2 May 1776, p. 290 (see appendix 1.8).

led to Chambers, either accidentally or intentionally, failing to allot an area for the repository in his design.[147] The Society alerted Chambers to this omission, in addition to further criticisms of his plans, specifically, the lack of space for the library, the fact that the Society would have to share an entrance hall with the Royal Society of Antiquities and that no office was provided on the ground floor for 'the transacting some of the business of the Society'.[148] Eight days later the Society received a letter from Chambers where he indicated that his plans could be revised to include the repository.[149] In the initial design, the council room was located in the attic. Chambers suggested that it could be moved to the same floor as the library. The library could be split over two rooms, one of which could also act as a council room. Whether the council thought that this was a satisfactory compromise is difficult to say, as is if they were already mindful of relinquishing their repository, but certainly they voted in favour of relocating to Somerset House and opted not to ballot the wider membership of the Society on the issue of moving.

By 1779, the Council of the Royal Society judged that the repository should be transferred to the British Museum.[150] It is not certain whether this had been the plan since Chambers's designs were received or whether this was a decision they came to sometime after. However, it seems that, one ought not to underestimate the effect the failure of the museum's inspectors to preserve Forster's donation when they were instructed to do so might have had. The Council may have been concerned that this was indicative of their collection once again spiralling into decline, which might suggest that the decision to relinquish their repository was made in 1776. In addition, their decision not to ask non-council members to vote on the move suggests it may have been an unpopular move. On the other hand, it could have been so widely assented to that there was no need to canvass wider opinion. Certainly in the intervening years between the Society's receipt of Chambers's plans and their decision to transfer the repository's holdings to the British Museum, donations seem to have slowed; although the Chelsea Physic Garden continued their annual benefaction, the Hudson's Bay Company are not recorded as having donated anything after 1775 and activity in the repository and references to it are generally less frequent

[147] RS, Original Council Minute Book, vol. 6, 9 May 1776, pp. 291-2.
[148] RS, Original Council Minute Book, vol. 6, 10 May 1776, pp. 292-3
[149] RS, Original Council Minute Book, vol. 6, 18 May 1776, pp. 294-6.
[150] RS, Original Council Minute Book, vol. 7, 29 July 1779, p. 30.

than in previous years. However, some donations did still occur and annual inspections of the repository continued, so perhaps it was assumed, at least by some of the Fellows, that the repository would be retained upon their move to Somerset House; an opinion that was perhaps fuelled by the fact that the Society had made such a concerted effort to improve and build their collection during the early 1770s.

At whichever point between May 1776 and June 1779 that the final decision to relinquish the repository was taken, it seems to have turned on the question of whether it was preferable for the Society to lose their repository or compromise the library and council room. Seemingly the repository lost out, and by June 1781, it had been removed to the national collection.[151] Daniel Solander was responsible for overseeing the transfer and organising the collection upon its arrival at the Museum. As the fourth chapter will discuss, the British Museum appears to have been keen to conserve the objects following their accession and various tradesmen were employed to mend the existing cases and arrange the specimens in addition to purchasing further glass containers for some of the objects. Still, the Museum is unlikely to have progressed particularly well with conserving and arranging the Society's collection given that in May 1782, less than a year after the transfer, Daniel Solander died of a stroke aged only 49, which, again as the fourth chapter will argue, may have contributed to the collection's demise. This also exemplifies the wider problem that the repository experienced specifically the need for enthusiastic and interested parties to drive the repository project forward. With Hooke, Colwall and Grew to name but three, during the early period, there was a relatively constant stream of willing volunteers to use the repository and collect on behalf of it. However, as Uffenbach notes, Newton and Sloane's attention was diverted to other things and so they were unable to devote the time and vision to the repository that it required. Although Sloane was involved in reviving the collection during the 1729-34 committee, it seems that there was a general slackening of interest once the task of refurbishing the repository had been completed, particularly between 1740 and 1763. This is particularly evident when the activity in the repository is viewed in contradistinction to that in the library. For example, as Boas Hall notes, throughout the 1740s there was a library committee.[152] However, no equivalent committee was set up to inspect the repository. As discussed

[151] RS, Original Journal Book, vol. 30, 15 November 1781, p. 607.
[152] Boas Hall, *Library and Archives*, p. 9.

earlier the Society's president, Martin Folkes appears to have been more interested in the library's collection than in the repository's holdings.

This also seems to be symptomatic of the repository being part of an organisation that did not specialise in keeping objects. Initially having a repository occupied a central role in the Society's ideology, so preserving its objects was at the forefront of the Fellow's minds, but as the years progressed it became deemphasised for a variety of reasons and became marginal to other more pressing concerns. Unlike a museum collection whose only concern is the collection which it houses, the repository was part of an institution with a raft of projects. As such, with limited staff and funds, it could only achieve as much as the time and effort its members were prepared to put in. Furthermore, and as will become apparent in the discussion of subsequent chapters, Fellows appear to, consciously or otherwise, consistently prioritise text over objects, as reflected in the Society effectively choosing its library over the repository upon moving to Somerset House. Finally, unlike the Ashmolean Museum, for example, where Elias Ashmole made detailed stipulations regarding the administration of his collection to ensure its legacy, and similarly Sloane's benefaction to the nation, the Society were not bound by such conditions and so once enthusiasm waned so too could the repository.[153] Similarly, by lacking the legal ingenuity of individual collectors such as Ashmole and Sloane who had the presence of mind to tie their collections with sufficient red tape that, at least initially, their collections would be preserved and not broken up, once the Society had transferred its collection to the British Museum, even if they had wanted to, they were powerless to intervene in its fate. As the fourth chapter will reveal, little of the Society's non-botanical material has survived. The remainder was either damaged or destroyed, sold to the Royal College of Surgeons or as the fifth chapter will note, so poorly documented that if items did survive, the lack of a clear paper trail prevents conclusive identification.

Although the repository was plagued by problems associated with the preservation of its collection throughout its life, these formed part of a wider issue

[153] Both R. F. Ovenell, *The Ashmolean Museum 1683-1894* (Oxford: Clarendon Press, 1986), pp. 49-52 and Arthur MacGregor and Moira Hook, *Ashmolean Museum Oxford: Manuscript Catalogue of the Early Museum Collection (Part II). The Vice Chancellor's Consolidated Catalogue* (Oxford: Archaeopress, 2007) p. i.

associated with enthusiasm for the collection, both in terms of the reliance on the efforts of members to help maintain the collection and sidelining the repository in favour of the library, not least when the decision to relinquish the repository was taken. This is likely to have resulted from pragmatic reasons since collecting, arranging and preserving a collection of books was easier than for objects. Still, this sidelining of things for words is also manifested in the way the repository's objects were used and engaged with, as will become apparent from the second and third chapters. Text also proved useful for the repository however, since Hubert's collection was appropriated by the Society and given a new meaning via text, in fact words in some way authenticated the scientific and epistemic status of formerly curious, entertaining and crowd pleasing objects. Textual processes were used to manipulate the repository's various audiences' response to the objects; however this method perhaps backfired a little, as it resulted in raising expectations of what they might see and led to some damning criticisms from disappointed visitors. Notwithstanding all the preservation problems that the Society encountered, it seems that they held, particularly in the early and latter parts of its life, a sizeable collection. In addition, it seems that although there were some problems with the preservation of objects in the 1770s, these appear to have been far less damaging to the collection than the conservation issues of previous years. Consequently, it seems that although, the repository did not always provide a safe place for its items, by the end of its life, the situation had improved. The question remains however, which the fourth chapter will attempt to answer, to what extent the British Museum provided a 'safe and lasting repository' for the Society's former collection.

- CHAPTER TWO -

'Compiling God's Great Book [of] Universal Nature':[154]

The Royal Society's collecting strategies

The observables, Ingenuitys and Productions of Art and Nature to be met with, in the several parts of the world, may, by intelligent and jnquisitue men, be noted, collected and transmitted to the said Society, to be there laid up in their Philosophical store-house, that may serve in time for a solid foundation to superstruct such knowledge upon as may both really enrich the understanding of man, and signally conduce to the greater ease and conveniences of human life.[155]

For a scientific society who prized 'ocular demonstration' and were highly resistant to the 'hypothetical influence of Aristotelian's, Cartesians, Adepts, Astrologers, and Common longitudinarians',[156] building a collection of objects together with a network of observers in the field and experimenters in the laboratory who would provide the basis upon which to found a 'true matter of fact' occupied a central role in the early Royal Society's aspirations.[157] Therefore, collecting material became a key part of the Royal Society's work and their resulting repository developed into a place not just to bring together examples from 'God's great book [of] universal nature', but also provided a space in which to deposit experiments and proof of observations communicated by letter and shown at the Society's weekly meetings. However, the Society did not only passively wait to receive objects; various proactive methods were employed to accumulate specimens, particularly in the early and latter stages of the repository's life. This chapter will attempt to detail these measures and assess their efficacy, in addition to examining if, and for what reason, any periods of latency in the Society's collecting practices may have occurred.

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[154] Quotation taken from Anonymous, 'Account of Joseph Glanvill's *The Progres and Advancement of Knowledge Since the Dayes of Aristotle; in an Account of some of the most remarkable late Improvements of useful Learning*', *Philosophical Transactions*, 3 (1668), 715-6 (p. 715).

[155] 'Letter from Henry Oldenburg to Sir George Oxendon', RS, Original Letter Book, vol. 2, 6 April 1667, p. 1.

[156] In characterising the Royal Society, early-eighteenth-century keeper of the repository, Alban Thomas, made these comments in *A list of the Royal Society, instituted by King Charles II for the Advancement of Natural Knowledge. As also an advertisement shewing what subjects seem most suitable to the ends of its institution*, (London: J. Morphew, 1718), p .4.

[157] The phrase 'true matter of fact' appears in a 'Letter from Henry Oldenburg to Sir George Oxendon' in RS, Original Letter Book, vol. 2, 6 April 1667, p. 2.

The chapter will begin by briefly reviewing a sample of the wealth of literature on the history of collecting before asking what kind of collection the early Royal Society hoped to build. Adopting a broadly chronological approach, it will then turn to assess the Society's collecting strategies in detail. In a similar way to the first chapter, the repository's life will be divided into three time periods; the first, will examine the numerous collecting strategies employed during the repository's early years from 1663 until 1703 when its first curator, Robert Hooke, died. It will draw a distinction between proactive and reactive approaches to collecting and, with respect to the former, will focus particularly on the idea of targeted and general requests for objects. Second, the middle part of the repository's life between 1704 and 1768, a year after its curator Emmanuel Mendes da Costa was dismissed for embezzling the Society's funds, will be explored. During this period, the Society relied largely on unsolicited donations and also had to contend with increasing competition for specimens, not least from the cabinet of their own president Sir Hans Sloane, upon whose collection the British Museum was founded. Finally, the chapter will turn to focus on the end of the repository's life from 1768 until 1781, when the collection was transferred to the British Museum. This period will be viewed as witnessing a reorientation in the Society's approach to collecting. Through agreements with the Hudson's Bay Company, which secured an annual donation of specimens, and via a high profile exchange with the King of Spain's cabinet, the Society began to accumulate large quantities of specimens, and developed relationships with donors that, crucially, encouraged repeat donations and which continued when the repository was incorporated into the national collection.

Investigations into the history of collecting have tended to deemphasise the importance of collecting as a process in favour of analysing the context and content of the collection.[158] Robert Kohler, for example, attributes this to the fact that a key feature of material culture studies at the time when the history of collections became an offshoot of the discipline was the cultural, social and symbolic roles of objects, particularly in terms of object and collection biographies.[159] This largely semiotic

[158] For one of the more recent discussions of this see Robert Kohler, 'Finders, Keepers: Collecting Sciences and Collecting Practice', *History of Science*, 45 (2007), 428-454.
[159] Kohler, 'Finders, Keepers', p. 429. See for example Igor Kopytoff,, 'The Cultural Biography of Things' *Social Life of Things*, ed. by Arjun Appadurai (Cambridge: Cambridge University Press, 1986), pp. 64-91, Nicholas Thomas, *Entangled Objects: Exchange, Material Culture and Colonialism*

approach has since been combined with the acknowledgement that, although collections bear a symbolic connection with those who seek to accumulate and contain them, they also participate in a symbiotic relationship.[160] The notion of symbiosis between object and collector has necessarily led to a greater focus on collecting as a practice. Notwithstanding this, those who have addressed the practice of collecting have focussed predominately on collecting as an individual pursuit, which perhaps does not quite capture the characteristics peculiar to institutional collecting. In addition, much has been made of the purpose or psychology of collecting; asking why individuals, institutions and nations collect, whether it be an act of self-fashioning, a process that demonstrates the taste and judgement of the collector, or as part of a quest to secure immortality, or, for that matter, all three.[161] Of all the eras and areas of collecting that have received critical attention, it is the early-modern *Kunst-* or *Wunderkammern*, which directly preceded the repository, that have been the subject of the most concentrated studies of recent years and which will, perhaps, provide the most useful points of comparison in relation to the repository.[162]

From its inception, the Royal Society wanted to build a 'philosophical store-house' not just of objects, but of observations and experiments that together would provide the basis upon which knowledge might be founded.[163] Their hope, as Joseph

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in the Pacific (Cambridge, Mass: Harvard University Press, 1991), *Reading Material Culture: Structuralism, Hermeneutics and Post-Structuralism* ed. by Christopher Tilley, (Oxford: Blackwell, 1990), Janet Hoskins, *Biographical Objects: How Things Tell the Story of People's Lives* (New York; London: Routledge 1998), Edwina Taborsky, 'The Discursive Object', *Objects of Knowledge*, ed. by Susan Pearce (London: Athlone, 1990), pp. 50-77 and Chris Gosden and Yvonne Marshall, 'The Cultural Biography of Objects', *World Archaeology*, 31 (1999), 169-178.

[160] *Handbook of Material Culture*, ed. by Christopher Tilley, Webb Keane, Susanne Küchler, Michael Rowlands and Patricia Spyer, (London: Sage, 2006), *Things that Talk: Object Lessons from Science and Art*, ed. by Lorraine Daston (New York: Zone Books, 2004) and Staffan Müller-Wille, 'Linnaeus' Herbarium Cabinet: A Piece of Furniture and its Function', *Endeavour*, 30 (2006), 60-64.

[161] For classic studies relating to collecting see for example Jean Baudrillard, 'The System of Collecting', *The Cultures of Collecting*, ed. by John Elsner and Roger Cardinal (London: Reaktion, 1994), pp. 7-24 and Pierre Bourdieu, *Distinction: A Social Critique of the Judgement of Taste*, trans by Richard Nice (Cambridge, Mass.: Harvard University Press, 1984). Further recent analyses of the purpose of collecting include Werner Muensterberger, *Collecting: An Unruly Passion: psychological perspectives* (Princeton: Princeton University Press, 1994) and Russell Belk, *Collecting in a Consumer Society* (London: Routledge, 1995).

[162] See for example Paula Findlen, *Possessing Nature: Museums Collecting and Scientific Culture in Early Modern Italy* (Berkeley and London: University of California Press, 1994), Krzysztof Pomian, *Collectors and Curiosities: Paris and Venice, 1500-1800*, trans. by Elizabeth Wiles-Portier (Cambridge: Polity, 1990) and *The Origins of Museums: the cabinet of curiosities in sixteenth- and seventeenth-century Europe*, ed. by Oliver Impey and Arthur Macgregor (Oxford: Clarendon, 1985).

[163] References to the repository and the Society more generally as a storehouse, are particularly evident in the first ten years of the repository's existence, see for example RS, Original Journal Book, vol. 4, 23

Glanvill described was to form 'an Assembly, that might intercommunicate their Tryals and Observations' and that would work together so that 'improvable and luciferous Phaenomena, that lie scatter'd up and down in the vast Champaign of Nature, might be aggregated and brought into a common store'.[164] The repository, at least initially, was part of a comprehensive system of measures intended to work collaboratively to produce a storehouse of knowledge, which, particularly in its early years and as will be discussed later, had a direct impact on the Society's collecting strategy. This idea of a common store of knowledge also indicates the Society's ideological alignment with Salomon's House from Francis Bacon's Utopian unfinished work *New Atlantis*.[165] In fact, Paula Findlen notes that the Society characterised themselves as the realisation of Bacon's fictional scientific community.[166]

If the repository was intended to be part of the Royal Society's 'philosophical storehouse', the question of what they thought that the material aspect of their storehouse ought to contain seems to emerge. Bacon's work, amongst numerous others, sought to dissolve the boundaries between art and nature, so by the time the repository was set up, a natural philosophy collection would have been expected to include both natural and artificial material.[167] In addition, given that the Royal Society set up a committee in March 1664 'for collecting all the Phaenomena of Nature hitherto observed, and all experiments made and recorded',[168] it appears that initially they aspired to an encyclopaedic collection. Whilst the cabinets of curiosity that preceded the repository aimed at being encyclopaedic, as Lorraine Daston and

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November 1671, p. 214, RS, Original Journal Book, vol. 5, 19 February 1673, p. 12 and 'Letter from Henry Oldenburg to Sir George Oxendon', RS, Original Letter Book, vol. 2, 6 April 1667, p. 1.

[164] Joseph Glanvill, *Plus Ultra* or *The Progres and Advancement of Knowledge Since the Dayes of Aristotle; in an Account of some of the most remarkable late Improvements of useful Learning* (London: James Collins, 1668), p. 88.

[165] Francis Bacon, *New Atlantis* bound in *Sylva Sylvarum* (London: W. Rawley, 1651).

[166] Paula Findlen, 'Sites of Anatomy, Botany and Natural History', *The Cambridge History of Science*, vol. 3, ed. by Katherine Park and Lorraine Daston (Cambridge: Cambridge University Press, 2006), pp. 272-289 (p. 289). For more general comments on how the Royal Society subscribed to Baconian principles of philosophical inquiry see Arnold, *Cabinets for the Curious*, and Findlen's *Possessing Nature*, pp. 146-7. On the relationship between Salomon's House and the repository specifically see Arthur MacGregor, '"A Magazin of all Manner of Inventions": Museums in the quest for "Salomon's House" in seventeenth-century England', *Journal of the History of Collections*, 1 (1989), 207-12 (p. 210).

[167] Lorraine Daston and Katherine Park, *Wonders and the Order of Nature 1150-1750* (New York: Zone Books, 2001), p. 260.

[168] RS, Original Journal Book, vol. 6, 30 March 1664, p. 64.

Katherine Park point out, the notion of encyclopaedism for the repository's precursors aimed not at the largely unachievable universality of holding an example of every thing, but sought rather to bring together a representative sample of the world in the sense of 'representing nature at peak intensity or creativity'.[169] By contrast, the Society appears to have sought encyclopaedism in the strictest sense, though this desire was short lived. Certainly the ambition, in common with Salomon's House, was to develop a storehouse, an almost 'one-stop shop' for knowledge of natural philosophy, but there also seemed to be a move to be more discerning, particularly in terms of the objects accumulated. For example, in answer to a letter from William London who on writing a natural history of Barbados inquired what 'rarities and exotics' the Royal Society would like him to send for their repository, rather than saying everything, the Society's reply was much more measured.[170] They asked for 'draughts or pictures of all the Birds, Beasts, Fishes, Insects, Plants [and] most remarkable mechanical contrivances' and that he only send over examples of 'stones, Earths, Minerals, Clays, Sands [and] salts […] where he wants means of examining them'.[171] In fact the only specimens requested were 'as many of the Leaves, Fruits, Flowers &c as he can drying them in Paper'.[172] This was possibly for pragmatic reasons since transporting plants and earths over long distances was significantly easier and ultimately more successful than fish, bird and mammal skins, whose fragility and tendency to become infested meant that, by the end of a long sea voyage, little of the original skin survived.

This impression of selectivity when accumulating objects is also apparent in the writing of the repository's first curator Robert Hooke, though perhaps for different reasons. Hooke argued in a footnote entitled on 'collecting the Phenomena of Nature, for the compiling an History' that in choosing materials

[169] Daston and Park, p. 272.
[170] William London's offer of specimens is described in 'Letter from John Evelyn to Robert Hooke', RS, Original Letter Book, vol. 29, 23 July 1681, p. 132.
[171] 'Letter from Robert Hooke to William London', RS, Original Letter Book, vol. 29, No date [c. 19 October 1681], p. 134.
[172] 'Letter from Robert Hooke to William London', RS, Original Letter Book, vol. 29, No date [c. 19 October 1681], p. 134.

Care ought to be taken that they are sound and good, and cleans'd and freed from all those things which are superfluous and insignificant to the great Design; for those do nothing else but help to fill the Repository, and to incumber and perplex the User.[173]

Notwithstanding that Hooke was discussing collecting objects as part of a history of nature, the 'Repository of Materials' he characterises sounds much like the Society's early repository, and one wonders how much his discussions were influenced by and went on to shape his charge. However, this resistance to potentially superfluous items was not necessarily an acknowledgment of the unfeasibility of putting together a universal collection, or the difficulties associated with transporting items over long distances, rather that, as Hooke urged at the beginning of his 'Discourse on Earthquakes', there ought to be 'method in the collecting of materials, as well as in the sue of them'.[174] He appears to be suggesting that when choosing objects, both for collections and for experimentation, a concerted effort should be made to acquire samples that are accurate representations of the material they are selected to reflect.

Emphasis was also placed on collecting commonplace objects, in addition to those that were more unusual. As later repository curator Nehemiah Grew described in the preface to his catalogue of the Society's museum he identified that the Society's collection ought to include

Not only Things strange and rare, but the most known and common amongst us […] Not merely, for that what is common in one Countrey, is rare in another: but because, likewise, it would yield a great abundance of matter for any Man's Reason to work upon.[175]

In addition, to accumulating examples of ordinary material as well as the rarer and more unusual items which, arguably, populated cabinets of curiosity, the repository also appears to have subscribed to a much more rigorous view of encyclopaedism than its antecedents. Still acting concurrently with the urge to collect *every thing* was a realistic view of the limitations of their collecting power, which was possibly connected to the problems associated with successfully transporting items

[173] *The Posthumous Works of Robert Hooke*, ed. by Richard Waller (London: Sam Smith and Benjamin Walford, 1705), p. 18.
[174] Robert Hooke, 'Discourse on Earthquakes', in *Posthumous Works*, ed. by Waller pp. 279-450 (p. 280).
[175] Grew, 'Preface', no pagination.

over long distances, in addition to Hooke's comments which highlighted the importance of being selective about the items that were collected both in terms of the quality of the specimen and to avoid superfluity. Whether this advice was heeded is difficult to discern, though given that there was a drive to dispose of duplicate items in the 1680s, which will be discussed in the next section, one suspects perhaps not. By the beginning of the eighteenth century, any desire for encyclopaedism appears to have been quelled and though a reference to building a 'complete repository' is evident in a letter written by Smart Lethieullier to Cromwell Mortimer in July 1734, it will become apparent that there is little evidence of a systematic and concerted approach to building the Royal Society's collection after the first thirty years of the repository's life until the late 1760s.[176]

Collecting during the repository's early years, 1663-1703

As the first chapter identified in its examination of the repository's formation, its collection was first significantly swelled by the purchase of Robert Hubert's cabinet of rarities, in 1666, using a donation from Daniel Colwall. Although this provided the basis for the collection, the Royal Society adopted a variety of approaches in order to accumulate objects. These fell broadly into two categories; the first, which could perhaps be termed as proactive methods, included making requests for specimens, taking plaster casts of unique objects, employing a collector to find items and more generally financially and intellectually facilitating collecting. The second is maybe less accurately called an approach since it refers to more spontaneous donations where benefactors were not asked directly to supply items and were not offered financial recompense either for the objects given, or for their transport. Such donations may however have been indirectly influenced by the more general requests for objects issued during the Society's meetings or via *Philosophical Transactions*. Exchanges that occurred during the early period also seem to fall into this second category since potential exchangers would approach the Society to propose a trade.

With the exception of Hubert's cabinet, the chief way in which the Society attempted to proactively accumulate objects, was by requesting specimens. Such requests tended to take one of three forms of increasing degrees of specificity. The

[176] 'Letter from Smart Lethieullier to Cromwell Mortimer', RS, Original Letter Book, vol. 21, 12 July 1737, p. 136.

first was a general entreaty to interested parties to donate items. For example, at the meeting in October 1663, when Hooke was ordered to be keeper of the repository, a promise made by Sir Robert Moray to provide copper ore for the Society's collection prompted a plea that 'every Member of the Society that had conveniency was desired to bring in oars of several kinds, to be put into their Repository'.[177] Three years later, and as discussed in the previous chapter, an advertisement which followed an account of a surgically removed bladder stone in the first issue of *Philosophical Transactions* attempted to induce donations by advising potential benefactors that items given to the repository would be preserved 'for after-ages', in addition to their being used for 'considerable Philosophical and Usefull purposes'; the meaning of the latter assurance will be discussed at length in the third chapter.[178]

Second were more targeted requests that would be made to particular individuals and companies, but which would ask for general classes of objects rather than specific items. This seems to have been directed particularly towards those who had some connection to the Royal Society. For example as part of his remit as secretary to the Society, Henry Oldenburg wrote dozens of letters intended to forge relations with potential correspondents from around the world and, although Oldenburg's letters were largely intended to invite contributions to the Society's 'philosophical storehouse' by sending observations of natural phenomena, included in some letters were also requests that specimens might be 'transmitted' to the Society.[179] For example, in February 1668, one of the Society's correspondents in the Bermudas was sent a letter thanking him for his communications and asking if he might send samples of various plants, trees, fruits, vegetables and herbs.[180] Once the Society had entered into communication with an individual, rather than being asked to tell the Society everything about the natural phenomena of their specific geographical

[177] RS, Original Journal Book, vol. 1, 21 October 1663, p. 240.
[178] Anonymous, 'Observables', p. 321.
[179] For a recent discussion of the Society's correspondence networks see Andrea Rusnock, 'Correspondence Networks and the Royal Society 1700-1750', *British Journal for the History of Science*, 32 (1999), 155-69 and regarding the content of accounts communicated to the Society, see David Carey, 'Compiling Nature's History: Travellers and travel narratives in the early Royal Society', *Annals of Science*, 54 (1997), 269-92. For the use of the term 'philosophical storehouse' see 'Letter from Henry Oldenburg to Sir George Oxendon', RS, Original Letter Book, vol. 2, 6 April 1667, p. 1.
[180] See 'Letter from Oldenburg to M Norwood' and 'Letter from Charles Howard to M Norwood', both in RS, Original Letter Book, vol. 2, both written on 10 February 1668, pp. 147-9 and 149-50 respectively. Receipt of these curiosities appears to have been recorded in RS, Original Journal Book, vol. 4, 19 November 1668, p. 1.

locale, they were asked specific questions in order to gain information and the Society appears to have employed a similarly targeted approach when requesting objects. Correspondence also appears to have had an indirect impact on donations of specimens. For instance, Samuel Colepresse, who wrote the Society an eclectic letter which observed tidal movements, commented on the fusion of metals and enclosed a paper on minerals also promised to send 'Specimina of every metal, marchasite and weed our country & mines afford'.[181]

The Society also approached their patron, King Charles II, for specimens. In March 1664, 'Dr Charleton suggested that Mr May should be spoken [to] to let the Society have all those fine Exotick birds of his majty that dye'.[182] Although the administrative records make no mention of birds being received, in July 1666, May did forward 'the skin of an Antiloe' which died in St James's Park.[183] A renewed request was made in April 1669 for any of the King's 'Beasts or Fowle' that died chiefly for the purpose of dissection, however given the lack of further references, this plan does not appear to have come to fruition.[184] Fellows also approached their friends; Walter Pope, for example, advised the Society in November 1667 that a friend of his in Cornwall had agreed to send 'what fish and fowle were to be met with in those parts'.[185] Fellows were also asked to forward items. For instance, Martin Lister, sent a letter together with samples of minerals in April 1683 following a request from the Society two months earlier in February 1683.[186]

Finally, the third form of request was more particular still and would target certain individuals for specific items. This approach tended to be in connection with the Society's correspondence networks and was directed towards those who wrote into the Society with observations. On occasion, an author who wrote to the Society with an account of a natural phenomenon would be contacted in order to secure a sample of the item described. So when Thomas Cox showed a small bone 'voided by

[181] RS, Original Letter Book, vol. 28, 6 March 1667, pp. 222-3.
[182] RS, Original Journal Book, vol. 2, 9 March 1664, p. 49.
[183] RS, Original Journal Book, vol. 3, 18 July 1666, p. 13.
[184] RS, Original Journal Book, vol. 4, 29 April 1669, p. 50.
[185] RS, Original Journal Book, vol. 3, 21 November 1667, p. 146.
[186] 'Letter from Martin Lister to Francis Aston', RS, Original Letter Book, vol. 8, 21 April 1683, p. 327.

William Throgmorton' the Society was eager to procure it for the repository.[187] They were similarly keen to obtain a rather unsavoury sounding bullet used to plug a hole in a Somerset man's stomach 'who exonerates all the Excrements, that otherwise are voyded by the Anus, through a hole in the left side of his Belly'.[188] Seemingly the bullet would be removed from the hole in order 'to open a passage for the excrements pressing there'.[189] In addition to human rarities, non-human items would also be sought. For example, at a meeting in March 1668, a letter from Joseph Walsh was read regarding observations he had made about a piece of rock 'whereon where found Mosse, Ferne, sticks, and a piece of wood, and blackberries and wild raspberries all petrified' and it was requested 'that some pieces of this Rock on which the enumerated particulars are found might be sent for'.[190]

When natural objects could not be obtained from their owners, particularly in the first eight years of the repository's existence, a model or plaster cast would be ordered to be made to reside in the repository as a substitute for the real object. For example, in June 1670

> Dr King produced a *calculus humanus* of about thirty-two ounces weight, which some years ago had been taken out of the bladder of one Mr Nicholas Byfield. He was desired, since the owner of the stone would not part with it, to get it cast in its full bigness and exact shape, for the Society's repository.[191]

The procedure of making replicas of unobtainable items was also practised for artificial objects. For instance, Hooke was ordered to make a copy of an instrument 'for measuring diameters to very minute parts' that was shown to the Society during one of their weekly meetings in July 1667.[192] Perhaps unsurprisingly, Hooke claimed that he had already invented an instrument that did the same thing and which was 'of more plain and easy use', so an instrument following his design was made for the

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[187] RS, Original Journal Book, vol. 3, 21 March 1667, p. 78.
[188] RS, Original Journal Book, vol. 4, 9 December 1669, p. 101.
[189] RS, Original Journal Book, vol. 4, 9 December 1669, p. 101.
[190] RS, Original Journal Book, vol. 3, 5 March 1668, p. 189.
[191] RS, Original Journal Book, vol. 4, 2 June 1670, p. 144. For further examples see RS, Original Journal Book, vol. 3, 19 April 1667, p. 89 and Original Journal Book, vol. 7, 26 November 1684, p. 272. Even if an object was given to the repository, on occasion further plaster casts would be taken such as a stone 'grown in pene viri' given by Dr Edward Cotton in January 1671, See 'Letter from Edward Cotton to the Lord Bishop of Sarum', RS, Original Letter Book, vol. 4, 7 January 1671, p. 155 and RS, Original Journal Book, vol. 4, 12 January 1671, p. 164.
[192] Royal Society, Original Journal Book, vol. 3, 25 July 1667, p. 118.

repository instead.[193] After the beginning of 1671, making models of items seems to be more commonly practiced for artificial than for natural objects; for example, in February 1683, a replica model of Flamstead's 'Paris foot' was made, whilst in July 1685, Hooke produced models of Roman and Chinese abaci.[194]

In addition to this third type of requesting objects to obtain samples of the items upon which written accounts were based, the method of automatically sending samples to augment written accounts became quite a common practice during the early period.[195] Seemingly, accounts and observations of various natural occurrences sent to the Society were in some way deficient and required the extra explanatory power of the object or some sort of replica to provide a complete account of the phenomenon described. This seems to form part of the Society's more general desire to authenticate written observations. Accounts of natural phenomena together with experiments conducted on them and examinations of them using microscopes, for example, were largely communicated via the reported experience: a temporally and geographically specific event communicated by a trusted observer and often attested to by multiple, credible eyewitnesses, which would frequently be presented in the form of a written account sent to the Society.[196] The observer would resist the temptation of making a universal statement on the nature of the world based on their findings and seemingly the theory was that knowledge would only be produced when sufficient accounts had been provided to 'superstruct' such knowledge upon. In a way, the object acted as an eyewitness to lend credence to the textual account. Having

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[193] Royal Society, Original Journal Book, vol. 3, 25 July 1667, p. 118.

[194] See RS, Original Journal Book, vol. 7, 28 February 1683, pp. 129-30 and RS, Original Journal Book, vol. 8, 29 July 1685, p. 9.

[195] For example John Locke's 'An Account of one who had horny excrescencies or extraordinary large Nails on his Fingers and Toes', *Philosophical Transactions*, 19 (1697), 694-6 was accompanied by samples. For the original meeting at which Locke's account was presented see RS, Original Journal Book, vol. 10, 24 March 1697, p. 19. Locke's findings and the objects were further discussed by Richard Wroe, 'Part of Two Letters from the Reverend Dr Rich. Wroe, Warden of Manchester Colledge, to Dr Hans Sloane, S. R. S. concerning Horn-Like Excrescences Growing on the Fingers', *Philosophical Transactions*, 24 (1704-5), 1899-1900.

[196] Literature on the early Royal Society's experimental practices and their view on knowledge production is vast, but includes Steven Shapin, 'Pump and Circumstance: Robert Boyle's Literary Technology', *Social Studies of Science*, 14 (1984), 481-520, Steven Shapin, 'The House of Experiment in seventeenth-century England', *ISIS*, 79 (1988), 373-404, Steven Shapin and Simon Schaffer, *Leviathan and the Airpump: Hobbes, Boyle and the Experimental Life*, (Princeton: Princeton University Press, 1985), Peter Dear, *Discipline and Experience: The mathematical way in the scientific revolution* (Chicago: Chicago University Press, 1995), particularly pp. 227-9 and his *Revolutionizing the Sciences: European knowledge and its ambitions, 1500-1700* (Basingstoke: Palgrave, 2001), particularly pp. 139-45.

sight of the material upon which accounts were based allowed the Society to authenticate or otherwise the observations and inferences of the author, without the need for assessing their credibility. However, simply seeing the object based upon which knowledge was produced at a meeting was not sufficient, the Society also appears to have wanted to be in possession of the specimen or at worst have some sort of simulacrum of it. Perhaps this is linked to notions of prestige, or a desire for completeness. Whichever this might be, as the third chapter will identify, notwithstanding the importance the Society placed on obtaining the object upon which an account was generated, it soon became subordinate to the written account. In addition, as will be discussed a little later, the relationship between object and text was mutually defining; whilst the object illuminated the textual account of a phenomenon, specimens were equally reliant on explication via text.

Results of experiments produced during meetings were also requested as evidence for inclusion in the repository. For example, Denis Papin produced samples of medals he had made in his digester using 'gelley of bones' at one of the Society's weekly meetings in April 1685 to be kept in the repository.[197] Nehemiah Grew was similarly requested that, as part of his lectures on the comparative anatomy of animals, he 'leave in the Repository those parts he should from time to time produce upon the occasion of the lectures'.[198] Experiments by parties related to the Society also found that the repository provided a place for them to be stored and perused at leisure, such as Edward Tyson's dissection of a 'Mexico musk-hog', which he anatomised at the College of Physicians before 'afterwards more leasurely examining it, at the Repository of the Royal Society'.[199] The practice of putting samples produced during experiments shown either at the Society's meetings, or conducted elsewhere, is not referred to beyond 1699. This could be because it was so commonly

[197] See RS, Original Journal Book, vol. 7, 1 April 1685, p. 312, and 6 May 1685, p. 323 and RS, Original Register Book, vol. 6, 15 April 1685, p. 237.
[198] RS, Original Journal Book, vol. 5, 8 February 1677, p. 178. There are further examples of the results of experiments shown before the Society being left in the repository from this period, such as Walter Needham who left eighteen glasses containing the phlegm, spirits, salts, and oils of the serum and grumus of the blood following his discourse on the serum of the blood, a sample of merchant Nicholas Waite's asbestos linen which had previously been burnt before the Society, and experiments conducted at one of the Society's meetings by Clopton Havers on oils and dissolving flesh which he then gave to Mr Hunt for the repository. See RS, Original Journal Book, vol. 5, 25 November 1675, p. 126, RS, Original Journal Book, vol. 7, 12 November and 3 December 1684, pp. 267 and 277 and RS, Original Journal Book, vol. 10, 14 June 1699, p. 131 respectively.
[199] Edward Tyson 'Tajacu seu Aper Mexicanus Moschiferus, or the Anatomy of the Mexico Musk-Hog', *Philosophical Transactions*, 13 (1683), 359-85 (p.359).

practiced, that it was not worthy of note. More likely however is that it no longer occurred, possibly because, as the third chapter will examine, experiments became less frequent during the eighteenth century, particularly those that left material results, and this reflects a more general shift of emphasis in the Society's scientific activities.

In addition to requests for donations, the Society also attempted to proactively swell their collection by employing 'Botanick traveller' Thomas Willisel. He was paid £30 to spend one year acquiring the natural productions of Britain in an attempt to rectify the imbalance between native and exotic specimens in the repository.[200] Willisel's employment was divided into three trips; the first five months were spent in England and Scotland, where he collected plants and 'some rare Scottish fowl and fish' all of which were presented to a meeting of the Society in October 1669.[201] On receiving Willisel's first consignment, the Society were keen to maintain momentum and it was ordered that

> Mr Charles Howard, Dr Goddard, Dr Merret and Mr Hook, or any two or more of them do meet and direct Thomas Willisel in his Employment of further collecting, such Plants, Fowls, Fishes and Minerals, and insuch parts of his Ma.ties Kingdoms as they shall think best for the use of the R. Society.[202]

Willisel appears to have been directed to Ireland for his second five month trip where he collected minerals, fishes and birds.[203] The remainder of Willisel's employment focussed on collecting 'such natural things as may be had in England, and are yet wanting in the Society's repository'.[204] Willisel appears to have concentrated his search for specimens in Southern England and East Anglia since he supplied plants from Kent, Norfolk and Suffolk as part of his final consignment of items for the collection.[205] It does not appear that Willisel's contract was renewed upon returning from this trip, though no reason is provided for this by the Society's administrative records. It may be that Willisel provided sufficient British specimens for the repository and no more were needed. Alternatively, the Society might have had ample

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[200] See RS, Original Council Minutes, vol. 1, 8 April 1669, p. 187 and 20 May 1669, p. 188.
[201] RS, Original Journal Book, vol. 4, 21 October 1669, p. 83.
[202] RS, Original Council Minutes, vol. 1, 11 October 1669, p. 194.
[203] RS, Original Journal Book, vol. 4, 3 March 1670, p. 122.
[204] RS, Original Journal Book, vol. 3, March 1670, p. 122.
[205] RS, Original Journal Book, vol. 4, 24 March 1670, p. 132 and 21 April 1670, p. 137.

willing donors to provide British specimens without charge. More likely perhaps was that a further commitment to a cost of £30 a year was considered beyond the financial resources of the Society.

The Society employed both a targeted and general approach in their direction of Willsel's collecting. On the one hand, and in a similar way to donations made by overseas correspondents, to take full advantage of Willisel, at least in the first ten months, was not to indiscriminately direct him to collect an example of every natural object, but to target certain things that were most interesting or most difficult to obtain via donation. However, by the final two months of his employment, a much less targeted method is apparent with Willisel being urged to provide the Society with all natural things from England that were 'yet wanting in the Society's repository'.[206] Although in one sense this indicates some degree of direction, there is also a sense of imprecision and vagueness in asking Willisel to collect everything not yet present in the collection. Based on this, Willisel's accumulation of specimens reflects two approaches to collecting; one particular and specific, the other exhaustive and imprecise. Both however reflect a commonsense approach in choosing methods which maximised the potential of Willisel's collecting; it made sense for him to be directed to obtain certain items in the first ten months of his employment because he had the luxury of time, whereas, when only two months remained, it was more practical for the Society to be a little less discerning.

The final way in which the Society attempted to proactively accumulate specimens was to facilitate collecting. This facilitation could be financial; for instance in April 1664, the Royal Society offered to pay the expenses incurred in obtaining and transporting objects in return for members of the East India Company collecting 'curiosities of Nature'.[207] Similarly Edward Cotton offered to send a sixty pound loadstone to the Society if they would pay for the cost of the carriage.[208] The Society's assistance could also be intellectual, or perhaps more accurately practical,

[206] RS, Original Journal Book, vol. 3, March 1670, p. 122.
[207] RS, Original Journal Book, vol. 3 August 1664, p. 117.
[208] RS, Original Letter Book, vol. 1, 6 February 1667, p. 389. It is unclear whether the Society agreed to pay, though a meeting between John Wilkins and Edward Cotton five months later in July 1667, states that Cotton 'had found out a Rock of Loadstones in that Country [Exeter], and would furnish the Society with one of any bignesse they shall desire' in RS, Original Journal Book vol. 3, 25 July 1667, p. 121.

particularly in terms of giving advice on how best to preserve items. For example as part of a catalogue of animals required for the repository, Christopher Merrett and Walter Charlton were asked

> to give directions how to prepare them as to their skins, when dead: concerning which Dr Merrett suggested that the dust of pepper was good to dry out all their moisture after evisceration; others proposed that Mr Crow's preserving powder formerly brought in by Dr Charleton might be sent into those parts from where such Animals are to be transported hither. [209]

Similarly

> Mr Boyle suggested that seeing Animals of remote parts have peculiar and considerable inward remote contrivances, some liquor as spirit of Turpentine might be thought upon and sent abroad for the preservation of internal parts, at least in smaller animals.[210]

Whether spirits or preserving powder were sent out to potential collectors is difficult to discern, however, once again, it indicates a proactive approach to collecting, if only in theory rather than in practice.

Although in a sense by virtue of having a repository and periodically issuing general pleas for specimens, all objects given to the repository were in some way solicited, a distinction ought to be made between the proactive approaches described above, which actively sought out objects in comparison with more indirect methods, where the Society was given objects, or approached by parties proposing an exchange. The latter seems to have been a relatively rare occurrence and in all instances seems to be characterised by the fact that the exchanger proposed the exchange to the Society and that the Society's agreement to it seems to have been more as a gesture of goodwill than speculation on what they might obtain from the exchange, notwithstanding that gains were made. Most notable of these instances were exchanges with Robert Southwell and the Dublin Society. Robert Southwell, Fellow and later president, of the Society and regular benefactor to the repository, asked if he might have some duplicate specimens in order to give his son 'a Tincture of those

[209] RS, Original Journal Book, vol. 2, 9 March 1664, pp. 48-9.
[210] RS, Original Journal Book, vol. 2, 9 March 1664, p. 49.

things, as a pleasanter sort of natural history than he will meet withal in Books'.[211] Interestingly, Southwell's hope to put together a small collection of natural objects for his son once again reflects the priority of physical specimens over written sources in order to gain a 'true' knowledge of natural history. In return for the duplicates, Southwell offered to give the Society four pieces of amber which contained various insects. This the Society agreed to and a selection of duplicates from the repository was given to Southwell in March 1682;[212] for which he forwarded the amber to them a week later.[213]

Soon after the Southwell exchange, the Dublin Society made advances to the Society that they might have 'all the Duplicates that can be spared from among the Rarity's of the R. S. Repository, and Musaeum Ashmolianum at Oxford'.[214] By 1687, the Dublin Society's formal meetings had been largely disbanded and they had yet to receive the Ashmolean and Royal Society duplicates at that point. The Dublin Society's meetings recommenced in 1693 and in 1695, they made a renewed attempt to acquire objects asking for

> such Duplicates, and specimens as may be no prejudice to [your Museum]; we shall only use them for the same noble ends and purpose wch you design, and make all the suitable returns which our poor Kingdom may afford & moreover acknowledge our selves infinitely obliged.[215]

A letter of thanks sent in May 1695 from the Dublin Society to the Royal Society together with the promise 'to make you all possible returns of gratitude', as well as one sent directly to president of the Society, Robert Southwell, thanking him for the intended donation, suggests that the Dublin Society were successful in acquiring some

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[211] RS, 'Letter from Robert Southwell to Thomas Henshaw', Original Letter Book, vol 8, 25 February 1681, p. 178.
[212] RS, Original Council Minutes, vol. 2, 8 March 1682, p. 9.
[213] The Society's recorded receipt of the amber in RS, Hooke Folio, 15 March 1682, p. 585.
[214] RS, 'Letter from Robert Plot to Huntingdon', Original Letter Book, vol. 9, 10 March 1684, p. 146. The fullest discussion of the Dublin Society's history can be found in K. Theodore Hoppen, *The Common Scientist in the Seventeenth Century: A Study of the Dublin Philosophical Society 1683-1708* (London: Routledge and Kegan Paul, 1970), p. 140, though P. Fontes da Costa also briefly mentions the exchange between the Royal Society and Dublin Society in 'The Culture of Curiosity at the Royal Society in the First Half of the Eighteenth Century', *Notes and Records of the Royal Society*, 56 (2002), 147-166 (p. 159).
[215] 'Letter from George Ashe to Robert Southwell', RS, Original Letter Book, vol. 11, bk. ii, 12 February 1695, p. 38.

of the repository's duplicates.[216] Moreover K. Theodore Hoppen suggests that one such return of gratitude was Thomas Molyneux's gift of a 'hexagonal joynt' of the Giant's Causeway received in December 1697.[217] However, unlike the Southwell exchange, there is no record of the Society dispatching the items to Dublin. In addition, Molyneux's gift was not spontaneous; it appears to have been requested by Sloane on behalf of the Society in October 1697,[218] and in fact regular meetings of the Dublin Society ended in the middle of 1697.[219] Still, it could be argued that the speed of Molyneux's response resulted from the goodwill between the two learned Societies, and possibly in part due to the exchange of items. If the Dublin Society did receive the repository duplicates, one wonders what happened to the specimens given the disbandment of the Society's meetings and also what might have become of the items given to Southwell. Furthermore, the requests made by both Southwell and the Dublin Society were for duplicate specimens reinforcing the sense that, in a similar way to books in a library, only one example of a specimen was required in a collection.

Finally, the dominant way of acquiring objects throughout the repository's life was from indirectly solicited donations. Motivation for these donations seemed to vary, though often, as noted above, they would accompany a written account. It is also perhaps not insignificant that there were occasions when gifts for the repository directly preceded the election of Fellows, such as Swedish candidate George Stiernholm who gave an instrument called a Linea Carolina, in November 1669, and was elected Fellow a month later.[220] In addition, seemingly a relationship between the Society and those who would eventually become Fellows appears to have started with their giving items to the repository. So Andrew Clenche, elected Fellow on 1 April 1680, gave an account of some 'tryalls & experiments' made with ginseng together

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[216] See 'Letter from Owen Lloyd to the Royal Society', RS, Original Letter Book, vol. 11, book .ii, 7 May 1695, p. 109 and Letter from Owen Lloyd to Robert Southwell', *Papers of the Dublin Philosophical Society 1693-1709*, ed. by K. Theodore Hoppen, 2 vols (Dublin: Irish Manuscripts Commission, 2008), II, p. 686.
[217] Hoppen, *Common Scientist in the Seventeenth Century*, p. 140. Receipt of the donation is recorded in .RS, Original Journal Book, vol. 10, 22 December 1697, p. 56 whilst Alasdair Kennedy briefly mentions the donation in his recent article 'In Search of the "True Prospect": making and knowing the Giant's Causeway as a field site in the seventeenth century', *British Journal for the History of Science*, 41 (2008), 19-41 (p. 33).
[218] RS, Original Journal Book, vol. 10, 20 October 1697, p. 47.
[219] Hoppen, *Common Scientist in the Seventeenth Century*, p. 183.
[220] RS, Original Journal Book, vol. 4, 18 November 1669, p. 90.

with a sample almost a year before in June 1679,[221] whilst Bernard Connor, elected on 27 November 1695, gave a miscellany of items some months earlier in March 1695 including some 'mans hair felted as it were cloth' and 'Iron turned into Copper' found in Hungary.[222] Even more frequent are instances where newly elected Fellows would give items to the repository shortly after their election. John van de Bemde, who was elected on 30 November 1678, gave sand from the Danube and stones from Mount Vesuvius nineteen days after his election.[223] Similarly Esprit Cabart de Villermont, who was elected on 13 May 1685, gave honeycombs found in the West Indies amongst other items a week later.[224] As the public face of the Society, giving items to the repository seems to have provided an opportunity to build a relationship between the Society and would-be Fellows. The repository also appears to have offered the chance for Fellows in the early stages of their membership to be part of the Society's work; by providing a place that they could contribute to and participate in immediately.

There are instances of donors who did not become Fellows; most notably perhaps Sir Philiberto Vernatti, governor of the Dutch East India Company at Batavia, who is credited with having donated extensively to the Society and is quoted in a much later dedicatory article to John Winthrop published in the 1737-8 edition of *Philosophical Transactions* as having been 'the chief Correspondent of the Royal Society in the […] East-Indies' in the early period.[225] One reason he did not become a Fellow could be his quite precarious position as working for the Dutch East India Company, but at the same time corresponding with and giving objects to an English scientific society. He commented in a letter to the Society written in January 1667 that

> these unfortunate warrs are almost my ruin, for upon the break of the two nations, it hath beene my unhappinesse, to bee accused by a crue of perfidious villaines […] as too great a friend to the English nation.[226]

[221] RS, Original Journal Book, vol. 6, 26 June 1679, p. 204.
[222] RS, Original Journal Book, vol. 9, 6 March 1695, p. 182.
[223] RS, Hooke Folio, 19 December 1678, p. 268.
[224] RS, Original Journal Book, vol. 7, 20 May 1685, p. 326.
[225] Cromwell Mortimer, 'Dedication to John Winthrop', *Philosophical Transactions*, 40 (1737-8), no pagination.
[226] 'Letter from Philiberto Vernatti to Robert Moray', RS, Original Letter Book, vol. 1, 17 January 1667, p. 415.

Vernatti's pattern of donation also reflects the combination of a targeted and general approach to securing donations. With regards to the former method, he commented of 'agra-lampes' requested by the Society that having spoken to the residents none had ever 'saw or heard of them' and of the desired 'bones of the cabalo' he would have sent some, but they were out of season.[227] This sense of donors being steered towards collecting particular items for the repository, is balanced by further comments made by Vernatti that 'if I discover anything hereafter, either naturall or artificial, worth your communication, I shall not fayle to endeavour the purchase of it' once again alluding to a more general approach to collecting objects.[228]

Whilst the Society did not necessarily shun thoroughness and both initially and periodically aimed at achieving an encyclopaedic collection during the early period, pragmatism and trying to make the most of the collecting resources available to them, appears to have triumphed over specific collecting ideologies. One further, and slightly anomalous, spell of collecting is perhaps worthy of note. Between late 1694 and mid 1699, the Society appears to have attracted donations of live animals including a rattlesnake, two opossums and a peacock. The first to be donated was a live rattlesnake, which was given by their president, Sir Robert Southwell, in December 1694.[229] Whether it was put in the repository is not stated, but once dead, it was put in spirits and kept in the repository.[230] Two opossums, donated in July 1697 and August 1699, were kept in the repository.[231] Henry Hunt was ordered to care for a further rattlesnake, described worryingly as 'very lively' that was donated with the first opossum and which given Hunt's work in the repository is likely to have been kept there.[232] A peacock was donated in August 1699, which Hooke looked after, though again whether it was kept in the repository is again difficult to discern.[233] However, the receipt of live animals appears to be a relatively short-lived practice, much like the animals themselves.

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[227] 'Letter from Philiberto Vernatti to Robert Moray', RS, Original Letter Book, vol. 1, 17 January 1667, p. 416.
[228] 'Letter from Philiberto Vernatti to Robert Moray', RS, Original Letter Book, vol. 1, 17 January 1667, p. 416.
[229] RS, Original Journal Book, vol. 9, 12 December 1694, p. 175 and 19 December 1694, p. 176.
[230] RS, Original Journal Book, vol. 9, 20 February 1695, p. 181.
[231] RS, Original Journal Book, vol. 10, 20 July 1697, p. 44 and 2 August 1699, p. 143.
[232] RS, Original Journal Book, vol. 10, 20 July 1697, p. 44.
[233] RS, Original Journal Book, vol. 10, 5 July 1699, p. 137.

Collecting during the repository's middle years, 1704-1768

Between 1704 and 1768, the repository relied largely on unsolicited donations. As discussed in the first chapter, although reports regarding attempts to revive the repository in the 1730s and 1760s stated that improving the condition of the repository's objects would induce donations, generally there is little evidence of a proactive approach to collecting.[234] For example, when James White approached James Petiver offering to make collections and answer queries on the natural phenomena of Spain 'if either Her Majesty or the Royal Society would defray the charges of making such collections', his offer appears to have been rejected.[235] The one exception to this lack of proactivity occurred in the Society's purchase of fossils following an advertisement in the March and April 1708 edition of *Philosophical Transactions*. It stated that recent textual 'discourses on Formed Stones, and their Origin, are not so clearly understood, for want of a competent knowledge of those Bodies'.[236] The advertisement went on to say that a collection of fossil samples, a list of which, named according to Edward Lhuyd's *Lithophylacii Britannici Ichnographia*, was appended to the article, could be purchased for the sum of one guinea from Alban Thomas the, then, librarian of the Ashmolean Museum.[237] The Society asked that samples of these be sent to them and upon examining the fossils at a meeting in December 1708, it was decided that they would purchase a collection.[238] The Society's decision to buy the specimens is particularly interesting given that Hooke had an extensive collection of fossils.[239] That the repository was viewed to be sufficiently wanting in fossils that a purchase of further specimens was deemed necessary only five years after Hooke's death suggests either that his collection was not incorporated into the repository, or that only a small number of items were given,

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[234] For the reports see RS, Original Council Minutes, vol. 3, 18 February 1734, pp. 134-41 and RS, Original Journal Book, vol. 25, 17 November 1763, p. 144-51.
[235] RS, Original Journal Book, vol. 11, 18 June 1713, p. 365.
[236] Anonymous, 'Advertisement', *Philosophical Transactions*, 26 (1708-9), 77-80 (p. 77).
[237] Anonymous, 'Advertisement', p. 80. For Lhuyd's book see Edward Lhuyd, *Lithophylacii Britannici ichnographia, sive lapidum aliorumque fossilium Britannicorum singulari figura insignium, quotquot hactenus vel ipse invenit, vel ab amicis accepit, distributio classica ... Cum epistolis ... de quibusdam circa marina fossilia et stirpes minerales præsertim notandis* (London: impensis Isaaci Newton et al, 1699).
[238] RS, Original Journal Book, vol. 11, 15 December 1708, p. 157.
[239] For a recent discussion of Hooke's fossils see John Thackray, 'Mineral and Fossil Collections', *Sir Hans Sloane: Collector, Scientist, Antiquary, Founding Father of the British Museum* ed. by Arthur MacGregor (London: British Museum Press, 1994), pp. 123-135.

notwithstanding that his estate's administrator Mrs Bellon is recorded as presenting 'several natural things' to the Society in April 1703 that formerly belonging to him.[240]

The way in which the fossils were marketed suggests that although the textual and pictorial accounts of fossils provided in various naturalists' works were useful, having physical examples of the bodies was necessary to have a complete natural knowledge. This perhaps recalls Hooke's criticisms of the limitations of gaining knowledge of natural history from books and pictures since

> without inspection of the things themselves, a Man is but a very little wiser or more instructed by the History, Picture, and Relations concerning Natural Bodies; for the Observations for the most part are so superficial, and the Descriptions so ambiguous, that they create a very imperfect Idea of the true Nature and Characteristick of the thing described, and such as will be of very little use without an ocular Inspection and a manual handling, and other sensible examinations of the very things themselves.[241]

However at the same time, there is a strange connection between text and object. Although the primacy of the fossil specimen was emphasised to induce purchases, the collection remained inextricably linked to a piece of text since the fossils were named according to Lhuyd's book. As a result, the fossils do not stand alone; rather they are contained and mediated by text.

This relationship between text and object is evident throughout the repository's life. In a similar way to the earlier period, samples were given to the Society to accompany accounts of phenomena and experiments, particularly in the first half of the period. However, the relationship between text and object was not one directional, rather object and text were mutually defining. Whenever an object was sent to the Society, its identity was fixed by text in one of two ways; first by the letter, catalogue or account that accompanied its donation, which provided information on the circumstances of the object's discovery, its name and what it might mean. For instance, in a letter written by Smart Lethieullier to Cromwell Mortimer in July 1734 to accompany three infants' bodies preserved in spirits who died at birth, Lethieullier's written description imparts details that the specimen could not convey. He described that they were the children of

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[240] RS, Original Journal Book, vol. 11, 28 April 1703, p. 20.
[241] Hooke, *Posthumous Works*, ed. by Waller, p. 338.

Elizabeth Baggs, a hard labouring woman in Oxford […] delievr'd at one birth in the year 1714. They all lived some hours after they were born.[242]

Secondly, even if no explanatory information accompanied the object, its donation would be recorded in the Society's administrative records, usually its 'Journal Book' together with provenance information. The importance placed on the provision of textual information reinforces the notion that although there is a strong sense throughout the repository's life that the text is lacking something without the object upon which its knowledge is based as a kind of eyewitness to justify it, in fact the object too is lacking without the extra explanatory information communicated via some form of text which identifies and contains it. The irony is that, in general, the literature intended to contain and communicate the Society's objects has outlasted the objects themselves.

Whilst the Royal Society as an institution failed to proactively obtain donations, their president, Sir Hans Sloane, played an influential role in securing the largest cumulative donation to the repository. From 1722, Sloane arranged an annual contribution of fifty cultivated dried plant specimens from the Society of Apothecaries at the Chelsea Physic Garden to the Royal Society in lieu of the yearly rent owed to him.[243] The Physic Garden's donations continued beyond the repository's transfer to the British Museum and at least until 1796 and resulted in the Society receiving some 2950 specimens during its life, which as the fourth chapter will argue, represented almost half of the total collection donated to the British Museum.[244] Sloane's success in obtaining objects to swell the collection, in addition to encouraging a steady of flow of specimens perhaps reveals an understanding of how to successfully build a collection and also reflects the importance of the efforts of individual members of the Society to make the repository, as an institutional collection, a success. In a similar way to the earlier period where Fellows such as Hooke, Grew and Colwall were

[242] 'Letter from Smart Lethieullier to Cromwell Mortimer', RS, Original Letter Book, vol. 21, 12 July 1734, p. 136.
[243] For further information on the Chelsea Physic Garden donation see Ruth Stungo, 'The Royal Society Specimens from the Chelsea Physic Garden', *Notes and Records of the Royal Society of London* 47 (1993), 213-224. Donations to the Society from 1744 onwards are recorded in their RS, 'A list of objects presented to the Royal Society Museum, 1744-1779', MS 419, see pp. 1-11 for 1744 to 1768 inclusive.
[244] Stungo, p. 215.

instrumental in steering the repository project forward and, as will become apparent, in the later stages of the repository's life, with members such as Samuel Wegg, Daines Barrington and Joseph Banks, the ability and success of the Society in acquiring objects and having a functioning and well ordered repository was largely dependant on the enthusiasm of its individual members.

Of the indirectly solicited donations, and in a similar way to the earlier period, there is evidence of individuals donating prior to their election as Fellows or soon after. Between 1717 and 1718, there seems to have been a spell of individuals donating objects shortly before their election. James Mickleton, who was elected as a Fellow in July 1718, gave a print of Henry Spelman to the Society some months earlier in November 1717,[245] whilst Orlando Gee gave the bill of a 'corvus indicus' seven days before his election on 14 November 1717.[246] Similarly John Conduit gave a bag of medals from Gibraltar in November 1718, and was elected two weeks later.[247] Again in the same way as the earlier period, donating objects does not always appear to have secured election as a Fellow since a Mr Faulkner who gave 'a large collection of minerals and crystals in twelve boxes' in October 1735 was nominated two weeks later, but failed to obtain sufficient votes to become a member of the Society.[248] There are also examples of donations made soon after election, again like the earlier period, indicating a certain excitement over the ability to participate in the Society and the possibilities the repository afforded for the ease of that participation. John Ranby, for example, gave human foetal preparations to the repository at the beginning of March 1725, three months after his election,[249] whilst John Busby gave a broom 'made of one entire logg of wood' six months after joining the Society.[250] In addition, Moreton Gilks, who was elected in April 1735, sent a letter of thanks for being made a Fellow in June of that year with the promise that he would forward a collection of Derbyshire fossils for the repository, which were received in November 1735 some six months after his election.[251] This was not necessarily the norm, given

[245] RS, Original Journal Book, vol. 12, 7 November 1717, p. 190.
[246] RS, Original Journal Book, vol. 12, 7 November 1717, p. 189.
[247] RS, Original Journal Book, vol. 12, 7 November 1718, p. 250.
[248] RS, Original Journal Book, vol. 16, 23 October 1735, p. 175 and 6 November 1735, p. 182.
[249] RS, Original Journal Book, vol. 12, 4 March 1725, p. 451.
[250] RS, Original Journal Book, vol. 12, 22 October 1719, p. 356.
[251] See 'Letter from Moreton Gilks to Cromwell Mortimer', RS, Original Letter Book, vol. 21, 2 June 1735, p. 429 and 'Letter from Moreton Gilks to Cromwell Mortimer, RS, Original Journal Book, vol. 22, 26 November 1735, p. 86.

that would-be Fellows also engaged with the repository long before their election such as Frank Nicholls who gave the 'uterus of a foetus' in June 1722,[252] but who was not elected until some six years later, in May 1728, and John Senex, who became a Fellow in June 1728, but whose gift of fossils found near Shroud were received in December 1719.[253]

In June 1734, two months after his election as a Fellow of the Society, John Winthrop made the most substantial one-off donation of the middle period of the repository's life of in excess of 600 specimens, mostly minerals, from New England.[254] Whilst this was not his first donation to the Society, it was the first to be received by them. Unfortunately, the first batch of objects 'by the Disingenuity of the Pilot […] mis'd their Port' and ended up in a museum in Cambridge.[255] Winthrop's willingness to donate specimens seems to follow the precedent set by his Grandfather, the first governor of Connecticut, also named John Winthrop, who was an original Fellow of the Society and regular correspondent providing accounts of the natural phenomena of New England, in addition to astronomical observations.[256] Winthrop senior's most significant donations were received by the Society between 1670 and 1671. In light of his donations and those of his forbears, Winthrop was relieved of paying membership subscriptions to the Royal Society[257] and a dedication to Grandfather and Grandson appeared in the 1737-8 edition of *Philosophical Transactions*.[258]

The dedication ended in the hope that Winthrop's substantial benefactions might be replicated by others in the Society so that the 'Repository may soon become one of the most conspicuous in Europe.'[259] Unfortunately Winthrop's example does not appear to have significantly increased donations, if at all. In fact, by the mid

[252] RS, Original Journal Book, vol. 13, 21 June 1722, p. 206.
[253] RS, Original Journal Book, vol. 12, 3 December 1719, p. 382.
[254] Receipt of the donation is recorded in RS, Original Journal Book, vol. 15, 27 June 1734, p. 452 whilst a catalogue of the specimens is appended to the back of RS, Original Journal Book, vol. 15, pp. 459-487. The catalogue was reproduced in a nineteenth century American Journal see Anonymous, 'Selections from an Ancient Catalogue of Objects of Natural History, formed in New England more than one hundred years ago by John Winthrop', *American Journal of Science*, 47 (1844), 282-90.
[255] Mortimer, 'Dedication', no pagination.
[256] Lisa Jardine briefly discusses Winthrop's astronomical observations in *Going Dutch: How England Plundered Holland's Glory* (London: Harpur Collins, 2008), pp. 316-18.
[257] RS, Original Council Minutes, vol. 3, 13 July 1736, p. 167.
[258] Mortimer, 'Dedication', no pagination.
[259] Mortimer, 'Dedication', no pagination.

1740s, with the exception of the Chelsea Physic Garden's specimens, comparatively little was received. It is difficult to discern why this might be; perhaps the state of the repository deterred potential benefactors, though by 1736 the audit, cleaning and refurbishment of the repository had been completed. The increasing number of private collections, not least that of Hans Sloane may have been a contributing factor by providing increased competition to the repository for specimens. Although there is no evidence to explicitly say that rival institutions or private individuals were favoured over the repository, there seems to be an implicit nod towards the superiority of Sloane's collection both by external donors and within the membership of the Royal Society itself. For example, John Thackray notes that in addition to John Winthrop's donation to the repository, he also sent 800 rocks and minerals from New England to Sloane.[260] Although Thackray suggests that given the similarity between the donations, Winthrop's gift to the Society was later appropriated by Sloane, this seems unlikely both because Sloane received significantly more material than the repository, some 800 specimens compared with around 600 to the repository and because items similar to those donated by Winthrop survived to be recorded in later catalogues of the repository.[261] The fact that Winthrop made donations to a private and institutional collection alike indicates that he held the Royal Society and Sloanian collections in equal esteem, though perhaps Winthrop ranked the latter slightly higher as Sloane received a third more specimens for his collection than the repository.

This sense of external admiration for Sloane's collection is also evident from a donation made by Philip Zollmann to the Society of a collection of fossils at the end of December of 1729. Although Zollmann's gift was for the Royal Society, he asked if his donation might be compared and named using the fossils in Sloane's possession.[262] Zollman appears to have used the repository's collection to access that of Sloane, in addition to implicitly appraising which collection was superior. Furthermore, as the first chapter identified, even internally the quality of Sloane's collection was recognised given that during the committee to improve the repository's state, the committee visited Sloane's home to view his collection and get ideas for the

[260] Thackray, p. 129.
[261] Thackray, p. 129.
[262] See RS, Original Journal Book, vol. 14, 18 December 1729, pp. 387 and 389. A letter was sent soon after apologising for the delay in comparing the fossils to Sloane's collection in RS, Original Letter Book, vol. 19, 27 January 1730, p. 479.

repository.[263] In addition, Sloane's collection became increasingly prevalent in the show and tell sections of the Society's meetings, as will be discussed in the third chapter. Sloane also seems to have had a more effective network of collectors as potentially interesting specimens seem to have been communicated more rapidly to Sloane's collection than to the Royal Society's as in the case of 'a collection of petrefactions [and] incrustations &c from Derbyshire' sent by Moreton Gilkes, mentioned earlier in connection with the election of Fellows. Gilkes described that he would have sent examples of the 'incrustations' earlier, but having heard that collections from the same location had been made by other naturalists and forwarded to Sloane he had been

> desirous to re-examine and look a little more narrowly into the place from whence they are taken: that I might be able not only to amuse you with a few of the Bodies themselves, but to give you some account of their Production.[264]

Gilkes was keen to add further information and not solely duplicate what may have already been communicated to Sloane.

Sloane's collection also appears to have provided an alternative collection for specimens described in *Philosophical Transactions* to be lodged. As was discussed previously, in the years leading up to 1700, samples tended either to be sent to the Society or were requested by them to accompany accounts of natural phenomena. However by 1700, there are examples where the written description would be given to the Royal Society, but that samples of the natural phenomenon were forwarded to Sloane's collection. Thackray notes that the Reverend de la Pryme gave fossil shells to Sloane, but his account of the specimens went to the Royal Society, whilst a Mr Wilson sent asbestos to Sloane and similarly the description to the Society.[265] Although Thackray very generously hoped that Sloane may have given the Society first refusal, there is no evidence to suggest that this occurred. In fact, it seems that a value judgement was being made unconsciously or otherwise which determined that text should go to the Royal Society, but objects to a specialist collector, like Sloane.

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[263] RS, Council Minute Book, vol. 63, 8 May 1733, p. 60.
[264] RS, Original Letter Book, vol. 22, 26 November 1735, pp .86-7.
[265] Thackray, p. 127.

This divorcing of specimen and textual account, that the Society were so keen to keep together in the early period, is increasingly manifest during the eighteenth century. For instance, a paper that was presented to the Society by Matthew Maty in April 1768 on lava and other substances emitted by Mount Vesuvius included samples of the material to illustrate Maty's argument. However, whilst the material was shown at the Society, the samples themselves were given by William Hamilton to be lodged at the British Museum, again suggesting that a judgement was made about what each institution specialised in.[266] In fact, Hamilton's donation was not accessioned into the British Museum's collection until a day after Maty gave the paper on the specimens to the Royal Society.[267] In addition, Maty also identified that samples were sent to the Society the previous year 'for the purpose of analysation', which suggests that elements of the knowledge were in some sense made at the Society, in addition to their being instrumental in disseminating the resulting information via text.[268] The role of the Society in the production and dissemination of the findings based on Hamilton's objects supports Andrea Rusnock's recent characterisation of the Royal Society in the eighteenth century as 'as the central institution […] for the legitimation and arbitration of scientific activity in Britain'.[269] Still the Society was overlooked in the decision of where to store the physical material which participated in generating the data and it was instead kept amongst the national collection. Hamilton did send a practically identical donation of a painting of the Vesuvius eruption together with 'many specimens of salts and sulphurs' from the volcano a year later.[270] In addition, both institutions received a mushroom stone from Naples from Hamilton in June 1769.[271]

Notwithstanding the cross over between donations from Hamilton, the founding of the British Museum may have had an impact on the amount of specimens given to the Society. Judging from the Museum's 'Book of Presents', begun in 1758, although it was not given a large quantity of objects of natural history, certainly

[266] RS, Original Journal Book, vol. 27, 14 April 1768, p. 78.
[267] London, British Museum (BM), Book of Presents, CE 30, 15 April 1768, no pagination, records 'a large collection of lavas from Mount Vesuvius together with a Picture representing an Eruption of the Mountain'.
[268] RS, Original Journal Book, vol. 27, 14 April 1768, p. 78.
[269] Rusnock, p. 168.
[270] RS, MS 419, 13 April 1769, p. 11.
[271] See RS, MS 419, 8 June 1769, p. 11 and BM, Book of Presents, 9 June 1769, no pagination.

between 1758 and 1768, the Museum received significantly more than the repository.[272] The fall in objects donated to the Society may not have been solely due to competition from other collections or reluctance on the part of benefactors to donate given the worsening state of the collection. It also seems to reflect a lack of enthusiasm on the part of members of the Society in the collection. Furthermore, it may also be in part due to a more general reorientation in the Society's work which, as the third chapter will identify, is partly reflected in the repository's pattern of usage.

Collecting during the final years of the repository, 1769-1781

Following the committees of 1764 and 1765, charged with improving the state of the repository, donations appear to have begun to rise, though perhaps not as dramatically as the Society might have hoped. With fewer donations than expected and the dismissal of its curator for embezzling funds the previous year, by the end of 1768, the repository might be argued to have been staring into somewhat of an abyss. However the new year ushered in a reorientation in the Society's approach to collecting and as a result the repository experienced somewhat of a renaissance, albeit rather short lived. The catalyst for change came from what may initially appear to be an unlikely source. In 1768, the Hudson's Bay Company agreed to allow the Royal Society to send scientists to observe the 1769 transit of Venus at the Company's Churchill Bay Trading Post. Given the culture of secrecy surrounding the Company, this was a major coup and as Glyndwr Williams and R. I. Ruggles describe, treasurer of the Royal Society and later president of the Hudson's Bay Company, Samuel Wegg, played a key intermediary role between the two in agreeing both passage for the scientists and that the observations could take place.[273] Whilst there were close associations between the Royal Society and the Hudson's Bay Company prior to Wegg, various Fellows for example had held financial interests in the Company and the Society had often corresponded with them on a diverse range of scientific and

[272] BM, Book of Presents.

[273] Glyndwr Williams, 'The Hudson's Bay Company and Its Critics in the Eighteenth Century', *Transactions of the Royal Historical Society* 20 (1970), 149-171 (p. 171), and R. I. Ruggles, 'Governor Samuel Wegg, Intelligent Layman of the Royal Society, 1753-1802', *Notes and Records of the Royal Society* 32 (1978), 181-199 (p. 188). William Stearns, 'The Royal Society and the Company', *The Beaver* 276 (1945), 8-13 also discusses the relationship between the Royal Society and the Hudson's Bay Company, but does not attribute their improved intellectual and physical exchanges to Wegg's influence.

ethnographic subjects,[274] the secretive approach fostered by the Company to their charter trading territory meant that there were certain areas of information to which the Royal Society were denied access. Williams argues that given Wegg's dual positions, he was able to work to alter this promoting a more general co-operation between the Hudson's Bay Company and the Society.[275] As Richard Glover notes, in 1769, this led to Wegg introducing biologist Charles Pennant, to Hudson's Bay Company employee Andrew Graham, who was on leave from his Canadian post in London and who later took responsibility for collecting and compiling a series of donations from Hudson's Bay to the Royal Society.[276] Together the three appear to have had the idea to develop a collection of various natural objects from the Hudson's Bay area and deposit them at the Royal Society's museum. The Company gave four donations in total between November 1771 and November 1773 which were comprised of a variety of natural material, including avian, mammal and plant specimens.[277]

Following the first donation in 1771, a committee was set up 'to consider in what manner the collection of specimens from Hudson's Bay may be disposed in the Museum or other parts of the House belonging to the Society'.[278] The Society's success in securing specimens from the Hudson's Bay Company seems to have engendered a renewed enthusiasm in the repository and dedication to building the collection. Consequently, as part of the committee's report, read in March 1772, which was intended to be concerned with arranging the recently acquired material from Hudson's Bay, suggestions regarding additional trading companies that might be approached to donate objects were included, as well as various heads of state and other individuals in order to build a collection of natural history that 'might be worthy of the Museum of the Royal Society, and perhaps become a national honour'.[279] For

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[274] Stuart Houston, Tim Ball and Mary Houston, *Eighteenth-Century Naturalists of Hudson Bay* (Montreal: McGill-Queen's University Press, 2003) discuss the naturalists who made collections of objects on behalf of the Hudson's Bay Company to donate to the Royal Society.
[275] Williams, p. 171.
[276] Richard Glover, 'Introduction: Andrew Graham, the Royal Society collections and his "observations"', *Hudson's Bay Record Society* 27, ed. by Glyndwr Williams (Glasgow: Glasgow University Press, 1969) pp. xiii-lxxii (pp. xxii-xxiii). This is also noted by Ruggles, p. 195.
[277] The donations are recorded in RS, Original Journal Book, vol. 27, 5 December 1771, p. 543, and 12 November 1772, p. 660, Original Journal Book, vol. 28, 25 November 1773, p. 197, and 10 November 1774, p. 426 and Original Journal Book, vol. 29, 11 January 1776, p. 2.
[278] RS, Original Council Minutes, vol. 6, 29 November 1771, p. 119.
[279] RS, Original Journal Book, vol. 27, 26 March 1772, p. 601 (see appendix 1.5).

example, it was proposed that the East India, Turkish, Russian and African companies be contacted to inquire as to whether they might also be prepared to make an annual donation of specimens, possibly based on a list of 'desiderata' issued by the committee.[280] The committee appear to have been keen to stress that such donations would not only be useful to studies of natural history, but also to 'commerce and manufactures'.[281]

The idea of attempting to induce donations of natural history by emphasising the commercial utility of benefactions was perhaps fuelled by a letter sent by John Rheinhold Forster and read at a meeting of the Society a month earlier, in February 1772 on the subject of dying porcupine quills sent by the Hudson's Bay Company red and yellow.[282] He described how his findings had led him to '[endeavour] to excite the Hudson Bay Company to import quantities of these roots sufficient for dying' and that it demonstrates 'what improvement our manufactures may receive from a due cultivation of natural history'.[283] This was not an isolated instance, a little over a year later, in May 1773, a letter sent from the Committee of Natural History to the Governor and Committee of the Company described that

> Having endeavoured to find out whether some of the natural productions which you have been so obliging as to present to the Royal Society may not furnish materials for our manufactures we take the Liberty of stating to you the result of our inquiry. [284]

They found Buffalo hides 'to be as good a material as the skin of the Russia Buffalo for Bookbinding' and advised the Company on how to preserve the skin for safe passage to London.[285] They also made a pair of stockings from the hair of one of the Buffalo's hides 'which hung near the Neck' in addition to a hat, though the latter was mixed with rabbit hair.[286] The committee also advised the Company that they gave the wild swan specimen donated to the repository to an importer who advised that given

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[280] RS, Original Journal Book, vol. 27, 26 March 1772, pp. 600-1.
[281] RS, Original Journal Book, vol. 27, 26 March 1772, p. 601.
[282] RS, Original Journal Book, vol. 27, 27 February 1772, p. 587.
[283] RS, Original Journal Book, vol. 27, 27 February 1772, p. 587.
[284] Letter from the Committee of Natural History to the Governor and Committee of the Hudson's Bay Company', RS, Original Journal Book, vol. 28, 5 May 1773, pp. 129-31.
[285] RS, Original Journal Book, vol. 28, 5 May 1773, p. 129
[286] RS, Original Journal Book, vol. 28, 5 May 1773, p. 130.

the scarcity of swan down for powder puffs, it might be a commodity that the Company might consider exporting.[287]

It does not appear that the plan to attract donations from trading companies came to fruition given that almost a year later, in January 1773, the committee renewed their request 'that applications may be made to different companies […] for the natural productions of most parts of the Globe'.[288] The committee were more successful at fostering links with individual donors. In a letter dated May 1773, the committee reported that they had established correspondence networks with various agents in North America and the Caribbean specifically

> Mr Young at the Island of St Vincents Mr S Tessee Kuckham of Jamaica Dr Martin at New York Mr Livius in New Hampshire, as well as procured recommendations in their favour from the Earl of Dartmouth to the Governors of these respective Provinces, and shall be very happy to transmit the Queries or commands of any member of the Society to such our correspondents.[289]

This appears to have proved relatively successful. Although Livius, who gave 'a large pair of elk's horns' to the Society in December 1772, does not appear to have donated anything following the committee's letter and Young, whose positive response to procuring specimens in the previous month does not appear to have translated into donations, Martin and Kuckham did give objects.[290] Martin provided plant and fish specimens in March 1774,[291] whilst Kuckham gave a box of insects from Jamaica in April 1774.[292]

Of all the suggestions made in the report, the committee were particularly keen that the King of Spain send South American and Californian specimens, given the limited British colonial presence in the region and that such specimens might be exchanged for natural objects from the British Empire. The Society contacted the ambassador to the King of Spain, Prince Masserano, to suggest that the natural

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[287] RS, Original Journal Book, vol. 28, 5 May 1773, pp. 130-1.
[288] RS, Original Journal Book, vol. 28, 21 January 1773, p. 52 (see appendix 1.6).
[289] 'Letter from the Gentlemen of the Committee of Natural History to Dr Maty', RS, Original Journal Book, vol. 28, 6 May 1773, p. 129.
[290] See 'Letter from the Gentlemen of the Committee of Natural History to the President', RS, Original Journal Book, vol. 28, 1 April 1773, p. 107 and RS, Original Journal Book, vol. 28, 24 December 1772, p. 15.
[291] RS, Original Journal Book, vol. 28, 3 March 1774, p. 320.
[292] RS, Original Journal Book, vol. 28, 21 April 1774, p. 357.

productions of the regions under the King of Spain's jurisdiction might be exchanged for those of the British Empire. Once agreed in principle, Daines Barrington was keen not to lose momentum and so began

> making a small collection for the King of Spain's cabinet, which will be a beginning of the scientific commerce between the two countries.[293]

Barrington suggested that 'some spare duplicates in the British Museum' might be used as part of this.[294] Still it was not until February 1775 that

> two cases containing the present to the King of Spain […] were removed from the Society's House to the Custom House.[295]

In it is not clear whether the Royal Society received any objects in return. In his *History of the Royal Society*, Charles Richard Weld notes that the Society's receipt of a letter sent by Marquis de Grimaldi, Secretary of State to the King of Spain sent in July 1774, regarding the exchange was closely followed by cases containing natural objects for the museum.[296] However Weld is likely to be relying on anecdotal evidence as receipt does not appear to be recorded in the Society's administrative records. Still, although the intention was that 'this kind of reciprocal Traffick and exchange shall be kept up for the future', in a similar way to the Hudson Bay donations seemingly this did not occur beyond 1775,[297] quite possibly because soon after the repository's future was in jeopardy following its omission from architect William Chamber's plans for the Society's new accommodation at Somerset House.

Targeting trading companies and heads of state was not a new strategy, and as has been shown was evident in its embryonic form during the early years of the repository. What was different was the tenacity, enthusiasm and relative success with which the idea was pursued. The committee charged with building the collection had

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[293] 'Letter from Daines Barrington to Charles Morton', RS, Original Council Minutes, vol. 6, 2 August 1773, p. 187.
[294] 'Letter from Daines Barrington to Charles Morton', RS. Original Council Minutes, vol. 6, 2 August 1773, p. 187.
[295] RS, MS 635, 9 February 1775, no pagination.
[296] Weld, pp. 83-4.
[297] 'Letter from Marquis de Grimaldi to Lord Grantham', RS, Original Council Minutes, vol. 6, 28 July 1774, p. 253.

a much clearer idea of what the repository was lacking and a more coherent sense of what a collection of objects ought to contain. It is possible that it is no coincidence that such an approach coincided with an increasingly systematic approach to natural history and taxonomy in general. What is also interesting is the relationship between the British Museum and the Royal Society. The suggestion that duplicates from the British Museum ought to be sent to the King of Spain's cabinet to secure objects for what was technically a rival institution, notwithstanding their closeness intellectually and in terms of personnel, surely in some sense undermined the national collection. However, it does not seem to have been characterised this way. In addition, between 1770 and 1775, a comparison of the number of dried bird, mammal and botanical specimens received by the British Museum in comparison with the Royal Society demonstrates that the national collection received significantly less items than the repository. The largest collections received by the British Museum were from Anna Blackburne in July 1771, who also donated a collection of North American birds to the Royal Society a year later, a collection of animals from Dominica from a Mr Grant in August 1771 and two donations from the Royal Society itself in February and December 1772 containing duplicates of the Hudson's Bay specimens.[298] Donations of dried mammal and avian material to the British Museum was greater than the Royal Society between 1775 and 1776 when the Museum attracted three large donations from the Cape of Good Hope and the South Seas, two given by Forster and one from James Cook.[299] Still over the last ten years of the repository's life a comparison of its 'Donations Book' to the British Museum's 'Book of Presents' suggests that the two received a more similar quantity of natural history specimens than might have at first been expected.

The legacy of the relationships that the repository built with its donors might also raise its perceived profile. Earlier in this chapter's discussion, it was noted that the Chelsea Physic Garden continued to donate specimens beyond the repository's transfer to the Museum. This led to the Museum receiving some 750 plant specimens between 1782 and 1796; a donation which would not have occurred without the repository. The importance of the links forged between the Royal Society and the

[298] See BM, Book of Presents, 12 July 1771, August 1771, 24 January 1772 and 4 December 1772, no pagination.
[299] BM, Book of Presents, 8 September 1775, 6 October 1775 and 7 June 1776, no pagination.

Hudson's Bay Company have also been suggested to have proved important in encouraging donations from the company to various institutions in London during the early nineteenth century. John Richardson and William Swainson's 1829 work *Fauna Boreali-Americana* notes that the Hudson's Bay Company's regular donations to the Royal Society

> served to acquaint the residents with the value set, in England, upon the natural productions of the northern regions; and collections, chiefly of birds, have continued to be transmitted annually to London up to the present time.[300]

Following their donations to the Royal Society, the Hudson's Bay Company also seem to have built their own collection as part of their Hudson Bay Museum, likely to have been held at Hudson Bay House in London.[301] In the absence of the Royal Society's collection, the Company's goodwill towards institutional collections in London was directed toward the British Museum who received donations of specimens in 1819, 1831 and 1832, a number of which remain extant, and to the Zoological Society. The Hudson Bay donations acted as catalyst, not just internally within the Royal Society to change their approach to collecting, but also within the Hudson's Bay Company to become more open and willing to provide specimens for British naturalists.

Accumulating objects was subject to a series of negotiations, exchanges and favours being called in, and the reputations of both the repository and the Royal Society in general were pivotal in securing such donations. Equally important was the enthusiasm of Fellows in encouraging and making donations. Although in the repository's initial years, the Society were fairly successful in accumulating objects for their collection, by the eighteenth century the rise of private collections in addition to the establishment of the national collection in the mid eighteenth century, meant that competition for specimens was high and pickings were slim for the Society. The absence of a clear collecting strategy is also likely to have hampered their ability to attract donations and seems to cohere with the first chapter's implicit characterisation

[300] John Richardson and William Swainson, *Fauna Boreali-Americana; or, The zoology of the northern parts of British America* (London: John Murray, 1829), p. xii.
[301] Richardson and Swainson, p. xii. My thanks to Stuart Houston for his counsel regarding the location of the Hudson's Bay Museum, though it is important to note, that there is no documentary evidence to suggest that the Hudson Bay Museum was at Hudson Bay House.

of the Society's reactive rather than constructive approach to its collection during the middle phase of its life. Given that the Society discovered that they would have to relinquish their repository upon moving to new rooms at Somerset House, their proactive, focussed, and arguably most successful spell of collecting objects was short lived, but the legacy of their collecting, in addition to their success in attracting high profile and substantial donations, does bring into question the status of their repository in the latter stages of its life, particularly in comparison with the British Museum.

- CHAPTER THREE -

'For Considerable Philosophical and Usefull Purposes': The use of the Royal Society's repository

The end and work of this institution […] aimes at the improvement of all usefull sciences and Arts, not by meer speculation, but by exact and faithfull observations and experiments.[302]

As the first chapter identified, the Royal Society promised that objects donated to the collection, together with their associations to their benefactor would be preserved for 'after-ages', in addition to being employed 'for considerable philosophical and usefull purposes'. Whilst specimen preservation proved to be somewhat of a headache for the Society, as this mission statement suggests, the Society was keen not only to build a collection that would be preserved, but also to create a scientific cabinet, that might be used to contribute to the furtherance of knowledge. The idea of the repository's 'usefulness' recurs in discussions of the collection during the eighteenth century. For instance, in 1734, a report made by the repository committee described that depositing items in the Society's collection acted as a way 'of rendering them usefull to the Publick', whilst the 1765 committee noted the importance of preserving objects 'for the improvement of knowledge.[303] Unfortunately, no statement regarding how the collection would actually improve knowledge or be 'usefull' to the public is given. In consequence, this chapter will analyse the repository's pattern of usage throughout its life, in order to try and piece together what employing the repository 'for considerable philosophical and usefull purposes' may have meant to the Society and how their interpretation of 'usefulness' might have changed over the years.

The chapter will view the repository as contributing to the scientific activity of the Society in two relatively distinct ways; first as a collection of objects and second as a site or location where science could be practised or performed. The chapter will

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[302] 'Letter from Henry Oldenburg to M. Norwood', RS, Original Letter Book, vol. 2, 10 February 1668, p. 147.
[303] See RS, Original Council Minutes, vol. 3, 18 February 1734, p. 139 and Original Journal Book, vol. 26, 21 November 1765, p. 310 respectively.

begin by considering the objects which made up the collection and assess both the way in which the outward state or physical makeup of items given to the Society would be in some way altered in order to generate knowledge and the way in which the majority of the collection was treated, specifically that specimens would be filed away in the repository without resorting to invasive or destructive processes. It will assess the collection's participation in studies of comparative anatomy and the way in which a small number of its items functioned as exemplar specimens in various naturalists' publications. The repository's relationship to contemporaneous private and civic collections in London will also be explored, in addition to reflecting on the ways in which the repository's 'publick' engaged with its objects and how this coheres with the wider question of this study regarding the relationship between texts and objects. The chapter will then turn to examine the use of the repository as a site or location; first, it will consider the repository as an attraction where dignitaries and important visitors to the Society could be entertained and secondly, as a space which provided a place to conduct experiments, or perhaps more accurately to perform experiments, particularly when space was at a premium. Finally, it will assess how the positioning of the repository in relation to the Society's meeting room and library may have impacted both on its pattern of usage and the way it was viewed by the Fellows. Throughout, this chapter will build upon the first and second chapters' suggestion that the Society had a substantial collection to propose that, at least periodically, the repository, both as a collection and a location, played a significant role in the Society's work.

The use of the repository as a collection of objects

In 'A Discourse on Earthquakes' the collection's first curator, Robert Hooke, described his ideal repository as a place where an inquirer 'might peruse, and turn over, and spell, and read the Book of Nature', which he likened to a dictionary,[304] whilst in 'The Present State of Natural Philosophy', he criticised those natural philosophers who failed to 'find out the true Nature and Properties of Bodies; what the inward texture and constitution of them is, and what the internal motions, powers and energies are'.[305] Hooke's comments regarding how material cultural might

[304] Hooke, *Posthumous Works*, ed. by Waller, p. 338.
[305] Hooke, 'The Present Sate of Natural Philosophy' in *Posthumous Works*, ed. by Waller, pp. 1-7 (p. 3).

participate in the advancement of science reflect two ways of using objects; whilst the first way compares objects to a reference work, which can be perused, contemplated and even handled, but not in a way where the physical appearance of the items might change, the second way seems to point to more invasive practices where material is acted upon in a possibly destructive manner. The importance of invasive experimental procedures, in addition to observation are similarly reflected in a letter from secretary to the Society, Henry Oldenburg, to one of their overseas correspondents where he described that the work of the Royal Society 'aimes at the improvement of all usefull sciences and Arts, not by meer speculation, but by exact and faithfull observation and experiments'.[306] However the use of objects in form-altering or damaging experiments is potentially incompatible with the promise made in the article from *Philosophical Transactions*, discussed above, that objects donated to the repository would be 'preserved for After-ages'. Before 1703, objects from the repository participated both in the Society's experimental activities and in its observational studies, whilst after this date, items were largely engaged in the latter. In addition, the Society appear to have been aware of the potential contradiction between experimental use and preservation and, in most cases, overcame the problem by dividing specimens into samples for testing and examples to be preserved, generally prior to accession into the repository.

The most extensive use of natural material donated to the Society which changed or somehow altered the specimen appears to be in the cultivation of their seed donations. In April 1668, Charles Howard presented two boxes of various seeds from Padua and the Society was keen that he 'sow some of them'.[307] The fact 'some' is used suggests that the remainder were kept and possibly preserved in the repository. This is perhaps supported by the Society's treatment of a donation two weeks later of seeds from Pietro Cesi, which included specimens of 'papaver' or poppy seed from which opium is derived. Samples were given to Howard 'to make trials with them, as he should think fit' with the remainder being reserved for the Society's museum.[308] Judging from a letter written by Robert Southwell to the Society in March 1669, in which he hoped that the seeds he sent from Angola, Brazil and Portugal would arrive

[306] 'Letter from Henry Oldenburg to M. Norwood' in RS, Original Letter Book, vol. 2, 10 February 1668, p. 147.
[307] RS, Original Journal Book, vol. 3, 9 April 1668, p. 198.
[308] RS, Original Journal Book, vol. 3, 23 April 1668, p. 203.

'in time for the tryalls of this Spring', the cultivation of seed donations together with samples being left in the repository appears to have become a commonly accepted practice relatively quickly.[309] Prior to April 1670, seeds were given to Howard to cultivate. However after this date, seeds were distributed amongst various Fellows including John Evelyn.[310] Howard was also charged with cultivating plants sourced by Royal Society employee Thomas Willisel including a collection of sea plants from Kent and others gathered in Norfolk and Suffolk.[311] In contrast to the seeds, it does not appear that samples of these plants were reserved for the repository, though a later donation of a sea plant from a Mr Parris was transferred directly to the repository to be put in water.[312] Interestingly, although Thomas Sprat described in his *History of the Royal Society* that the Society had 'a large Inclosure, to serve for all Experiments of Gardening and Agriculture' at Chelsea College, if the Society did use this garden, it does not appear to have been noted within their administrative records.[313] This suggests perhaps that they favoured distributing seeds amongst their more horticulturally-minded Fellows, which may be in part due to a precedent set during the Society's temporary relocation to Arundel House following the Fire of London.

The Society's division of seeds between repository and planting continued until late 1701 and indicates the way in which the repository participated in creating knowledge for everyday use; knowing how seeds from abroad or various parts of Britain might grow in different geographical areas, would have been an important part of the Society's investigations into agriculture and horticulture and would have proved of use to people in those professions.[314] As the second chapter identified, this interest in using the donation of natural items to generate knowledge of use to

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[309] 'Letter from Robert Southwell to the Royal Society' in RS, Original Letter Book, vol. 3, 16 March 1669, p. 38.
[310] See RS, Original Journal Book, vol. 4, 19 November 1668, p .1, 20 May 1669, p. 58, 10 February 1670, pp. 113-4.
[311] RS, Original Journal Book, vol. 4, 24 March 1670, p. 132 and 21 April 1670, p. 137.
[312] RS, Original Journal Book, vol. 7, 20 December 1682, p. 112.
[313] Sprat, p. 434.
[314] Quotation taken from Anonymous, 'Account of Joseph Glanvill's *The Progres and Advancement of Knowledge*' p. 715. A general interest in the cultivation of plants is apparent in the choice of Charles Cotton, *The Planters Manual: Being Instructions for the Raising, Planting, and Cultivating all sorts of Fruit-Trees, whether Stone-fruits or Pepin-fruits, with their Natures and Seasons* (London: Henry Brome, 1675) and John Evelyn, *A Philosophical Discourse of Earth, relating to the Improvement of it for Vegetation and the Propagation of Plants* (London: J Martyn, 1676) to be reviewed in *Philosophical Transactions'* regular feature Anonymous, 'An Account of Some Books', *Philosophical Transactions*, 10 (1675), 373-4 and 454-6 respectively.

industry was also apparent in the early 1770s, but during the later period was employed, in part, as a strategy to encourage donations from trading companies.

The Royal Society was ultimately unsuccessful in their cultivation programme not least because, although seeds were outsourced to various parties, no information about how the seeds progressed following planting appears to have been recorded which leads one to suspect that either the seeds failed to germinate or no information was provided by the cultivators in question. Perhaps as a result of the latter, the Royal Society was a little reluctant to distribute seeds from Tunquin given by Robert Knox in early 1684. It was suggested that they 'might be disposed to curious persons desiring to […] cultivate them', which was agreed to provided that 'the names of the persons to whom the seeds are distributed be taken that they may be inquired after'.[315] There is no record of the results of the seed cultivations, and seemingly this problem continued. By 1700, an article in *Philosophical Transactions* a little pointedly laments the lack of feedback on the success or otherwise of a collection of seeds given by the East India Company which were distributed amongst various Fellows and other interested parties. It commented that although 'some additional informations have by this means received […] 'twas hoped more might have been had'.[316] The last donation of seeds to be distributed for planting was in December 1701.[317] However once again, no results were provided by the cultivators and no further cultivation of seeds either already in the collection or given to the repository are apparent.

That the cultivation of seeds was a comparatively short-lived practice, occurring for less than a third of the total life span of the repository, could be for a variety of reasons: perhaps practical ones such as the lack of interested Fellows or the fact that the Society simply did not receive a great number of seeds from donors or, as discussed above, the failure of those to whom the seeds were distributed to provide feedback on how their gardens were growing. The supposedly precarious position of the Society at Gresham College following Hooke's death may have been a further contributing factor, though if this was the case, one wonders why the practice was not revived following their move to new rooms in Crane Court a few years later. After all,

[315] RS, Original Journal Book, vol. 2, 6 February 1684, p. 205.
[316] Anonymous, 'An Account of part of a Collection of Curious Plants and Drugs, lately given to the Royal Society by the East India Company', *Philosophical Transactions*, 22 (1700-1), 579-94.
[317] RS, Original Journal Book, vol. 10, 3 December 1701, p. 232.

once in Fleet Street, the repository was set in a courtyard and surely a section of it could have been adapted for cultivating seeds. Notwithstanding this, and as will be discussed later in this chapter, the courtyard was used for the departure and arrival of coaches and perhaps this took precedence over any wish to cultivate specimens. It may also reflect a wider development in the history of botany and horticulture, namely the rise of botanic gardens, particularly the Chelsea Physic Garden who would later send an annual donation of dried specimens cultivated in their gardens to the Society and whose garden and the species grown there featured heavily in a series of papers written by James Petiver for *Philosophical Transactions* between 1713 and 1714.[318]

For the most part, by the beginning of the eighteenth century, the repository became a place to deposit seeds, rather than use them. For those samples where there was some utility in planting them or assessing how they grew, the donations appear to have been forwarded to specialist locations. For example, when the Society received a 'pot of mould with a plant called Pulsatilla rubra growing in it' from William Stukeley in April 1738, it was ordered to be sent to the Chelsea Physic Garden.[319] Similarly, upon receipt of Chinese seeds from a Father D'Incarilo in 1750, secretary of the Society, Cromwell Mortimer, elected to send the seeds to Chelsea, Oxford and Edinburgh Botanic Gardens rather than their remaining at the Society.[320] Interestingly, the British Museum appears to have had some sort of cultivation programme since during a discussion of 'deadly nightshade', William Watson informed the Society that some had been planted in the Museum's garden at Montagu House and 'those who were disposed to try its efficacy, might be supplied with the true sort'.[321] That the British Museum was engaging in this work in addition to maintaining a static collection, perhaps also once again hints at the repository's increasing marginalisation as a result of the national collection, as was discussed in the previous chapter.

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[318] See for example James Petiver, 'An Account of divers of rare Plants, observed last Summer in several Curious Gardens, and particularly the Society of the Apothecaries Physick Garden at Chelsea', 'Botanicum Hortense III: Giving an Account of divers Rare Plants observed this Summer, A.D. 1713, in several Curious Gardens about London, and particularly the Society of Apothecaries Physick Garden at Chelsea', both in *Philosophical Transactions*, 28 (1713), 33-64 and 177-221 respectively and 'Botanicum Hortense IV: Giving an Account of divers Rare Plants observed this Summer, A.D. 1714, in several Curious Gardens about London, and particularly the Society of Apothecaries Physick Garden at Chelsea', *Philosophical Transactions*, 29 (1714-16), 269-84.
[319] RS, Original Journal Book, vol. 17, 20 April 1738, p. 235.
[320] RS, Original Journal Book, vol. 21, 14 June 1750, p. 273 and 5 July 1750, p. 387.
[321] RS, Original Journal Book, vol. 23, 17 February 1757, p. 483.

It was not just seeds that were divided in order to both preserve a record for the repository and participate in experiments. In October 1668, a donation from Governor of the Dutch East India Company at Batavia, now Jakarta, Philiberto Vernatti, included 'three small canes filled with macasser-poyson', from central Indonesia which he described were used to poison the tips of arrows.[322] Whilst the bulk of the poison was transferred to the repository, a sample of the substance was retained to try on a dog.[323] At a meeting of the Society two weeks later, the poison was mixed with lemon juice and inserted into the dog's hind leg using a knife. Fortunately, the poison did not work and the dog 'was yet unconcerned when the Company departed'.[324] Although numerous experiments were conducted during the late seventeenth century using poisons, which reflects the Society's interest in the effects of animal and vegetable poisons and the antidotes that might be developed, the donation of material objects ostensibly for the repository provided the chance to conduct more ad hoc experiments. Utilising poisons sent for the repository does not appear to have been a standard practice however, since Benjamin Lannoy's donation of 'Mordesang' or 'stone of death', which was believed to be 'a rank poyson when taken inwardly', was sent directly to the repository without further testing.[325]

An attempt to preserve a record of the specimen in the manner it was given to the Society, whilst at the same time investigating it in a potentially form altering or destructive way is also evident, albeit using a different method, in the Society's approach to dissections of donations to its collection. The male and female opossums which were kept as live specimens in the repository, noted in the previous chapter, were both dissected following their death. Perhaps surprisingly, the female opossum survived for as long as seven months. Once dead, Henry Hunt produced a sketch of the creature before Edward Tyson anatomised the specimen.[326] Tyson determined that a pea size perforation in one side of the stomach which had become ulcerated caused the opossum's death and he published this and further findings in the April 1698

[322] 'Macassar poyson' is likely to refer to a poison found in Ujung Pandang, a city in Central Indonesia, on southwest Sulawesi Island.
[323] RS, Original Journal Book, vol. 3, 22 October 1668, p. 246.
[324] RS, Original Journal Book, vol. 3, 5 November 1668, p. 254.
[325] RS, Original Journal Book, vol. 4, 19 November 1668, p. 2. Oldenburg's letter of thanks on behalf of the Society is recorded in RS, Original Letter Book, vol. 2, 21 November 1668, pp. 328-30.
[326] RS, Original Journal Book, vol. 10, 23 February 1698, p. 59.

edition of *Philosophical Transactions*.[327] The male opossum was dissected by William Cowper and the results were published in April 1704, again in *Philosophical Transactions*.[328] The cause of death was 'mortification of the Duodenum' which appeared to have been the result of a quantity of hay which had collected in the opossum's stomach and was similar to that which Tyson identified in the female's stomach. Little indication is given within the administrative records as to whether the results of the dissections were preserved in the repository; however in both cases the outer appearance of the specimens was retained. Hunt's drawing of the female opossum, reproduced in *Philosophical Transactions* to accompany Tyson's article, provided evidence of its state prior to dissection, whilst the skin of the male opossum appears to have been stuffed and retained in the repository appearing both in the repository's 1734 manuscript catalogue and in a much later catalogue whose pages are watermarked 1763.[329]

A commitment to preserving the exterior form of a specimen allocated to be dissected was not however always apparent, perhaps significantly particularly post 1700. For example, neither a 'monstrous catling' dissected by Henry Hunt in March 1701,[330] or a hermaphrodite lobster presented in March 1730 by the aptly named Mr Fisher of Newgate Market and anatomised by Frank Nicholls, were ordered to be figured prior to dissection.[331] The reason behind this is difficult to discern though perhaps it was because commissioning drawings of items was a time consuming and potentially costly task, or it was simply not deemed necessary. Still, given that dissection was viewed by members of the Society to play a crucial role in the

[327] Edward Tyson, 'Carigueya, Seu Marsupiale Americanum. Or, The Anatomy of an Opossum, Dissected at Gresham-College by Edw. Tyson, M. D. Fellow of the College of Physicians, and of the Royal Society, and Reader of Anatomy at the Chyrurgeons-Hall, in London', *Philosophical Transactions*, 20 (1698), 105-164 (for the cause of death see p. 131).

[328] William Cowper, 'A Letter to Dr Edward Tyson. Giving an Account of the Anatomy of Those Parts of a Male Opossum That Differ from the Female', *Philosophical Transactions*, 24 (1704 - 1705), 1576-1590. See also William Cowper and Edward Tyson, 'Carigueya, Seu Marsupiale Americanum Masculum. Or, The Anatomy of a Male Opossum: In a Letter to Dr Edward Tyson, from Mr William Cowper, Chirurgeon, and Fellow of the Royal Society, London. To Which are Premised Some Further Observations on the Opossum; And a New Division of Terrestrial Brute Animals, Particularly of Those That Have Their Feet Formed Like Hands. Where an Account is Given of Some Animals Not Yet Described', *Philosophical Transactions*, 24 (1704 - 1705), 1565-1575.

[329] For the early catalogue see RS, MS 414, no pagination and for the later see RS, 'Catalogue of the Royal Society Museum', MS 413, p. 9.

[330] RS, Original Journal Book, vol. 10, 11 March 1701, p. 213.

[331] Frank Nicholls, 'An Account of the Hermaphrodite Lobster presented to the Royal Society on Thursday May the 7th, by Mr Fisher of Newgate Market, examined and dissected, pursuant to an Order of the Society', *Philosophical Transactions*, 36 (1729-30), 290-4.

development of anatomical studies, contributing both to an understanding of a particular specimen's anatomy and to human anatomy more generally, it is unsurprising that the opportunity would be taken when offered to asses the inner workings of the little known opossum and unique examples of specimens with physical deformities. As William Cowper describes

> The very existence of divers Organs in Human Bodies have been made known to us by Discoveries first made in the Bodies of Quadrapeds. The circulation of the blood, and the Passages for the Chyle and Lympha, had been little known to us as our Predecessors, were it not for Dissections made on the Bodes of several Animals.[332]

Like donations of poisons, a specimen of sufficient interest provided the chance for opportunity-led experiments, in this case dissections, to be performed. Again, like the poison and seeds, when an item was going to be acted upon in a potentially form altering way, attempts would in some cases, particularly pre-1700, be made to preserve a sample of the specimen in the way it was donated to the Society by preserving its outer appearance either via pictorial representation or by retaining the skin.

This privileging of, or at least attempt to privilege the exterior form of a specimen does not seem to have been apparent in the Society's treatment of artificial material, or perhaps more specifically, in their 'use' of scientific equipment. In his unpublished PhD thesis, Matthew Hunter makes much of the way in which scientific machinery was stripped down and remade citing the example of Denis Papin's engine for 'boyling bones' which Hooke took apart in order to demonstrate its workings at a meeting of the Society in February 1681.[333] This was not an isolated incident. From its inception, the repository was given instruments which various Fellows would seek to refine. In November 1663, for instance, Prince Rupert's 'instrument for casting any natural object into perspective' was given to the Society and Hooke was keen to adapt it so that it 'might incline and recline and be fitted to draw also solid Bodies in

[332] Cowper, p. 1576.
[333] Matthew C. Hunter, 'Robert Hooke fecit: making and knowing in Restoration London' (unpublished doctoral dissertation, University of Chicago, 2007), p. 466. For Hooke's dismantling Papin's engine at one of the Society's weekly meetings, see RS, Original Journal Book, vol. 6, 23 February 1681, p. 273.

perspective.[334] Whether Hooke was granted permission to make the alterations is not known, but he was asked to draw up plans and write a description of how the additions might improve the instrument and demonstrates a wider interest amongst the Society's Fellows in wanting to both understand and refine the inner workings of scientific instruments and models. In fact, Hunter argues that some of Uffenbach's disappointment about the repository's state, particularly his comment that many of the instruments were 'utterly broken and ruined', may stem from the way in which the Society treated scientific equipment by dismantling, rebuilding and remaking items.[335] In November 1731, twenty years after Uffenbach's criticisms, the report of the committee charged with examining the state of the repository commented that 'the Instruments & models of engines are generally so broken to pieces, that few of them are worth preserving'. This suggests either that the practice of dissecting instruments continued or, perhaps more likely, that the broken equipment that Uffenbach described was neither disposed of, or repaired and remained in the repository until the later committee ordered its removal.[336]

In fact, this refashioning of equipment appears to be particularly characteristic of the years until Hooke's death. After this time, there do not appear to be any references to adapting equipment given to the Society. For instance, Anton von Leuwenhoek's microscopes were sent by his daughter to the Society in November 1723 following his death and although an account was given of them to the Society by Martin Folkes, it was to urge their use rather than their adaptation.[337] Stephen Gray's electrical equipment and Huygen's telescope, the use of which will be discussed below, remain similarly untouched by the Society though Professor of Astronomy at Oxford, James Bradley, who offered the 'glass and old furniture of Mr Huygen's large telescope' also asked the Society

[334] RS, Original Journal Book, vol. 1, 11 November 1663, p. 246.
[335] See Quarrel and Mare, p. 98 and Hunter (2007), pp. 478-9.
[336] RS, Original Council Minute Book, vol. 3, 2 November 1731, p. 98.
[337] For the donation see RS, Original Journal Book, vol. 13, 14 November 1723, p. 320 and for Folke's paper see RS, Original Record Book, vol. 11 and Original Journal Book, vol. 13, both dated 23 January 1724, pp 416-23 and 345 respectively.

to accept of such new additions & improvements which his Uncle (Mr Pound) had made to the Furniture & apparatus viz curious micrometer, Made by Mr Graham, a new eye glass, a new directr to the sight & a new tin tube to carry the object glasse.[338]

Although improvements, or perhaps more accurately additions, to the instrument were made, this occurred prior to the instrument being given to the repository. Once part of the collection, it does not appear to have been further adapted. From the beginning of the eighteenth century, artificial equipment given to the Society appears to be viewed less as work in progress and more as a finished perfected article. As such it was used for the purpose it was designed for rather than being dismantled and remade.

There are instances of a very small number of natural objects that were donated to the Society prior to 1703 and which were submitted for testing without a sample being retained for the repository. This was particularly apparent in the Society's approach to Bolonian stones, a phosphorescent chemical compound now known as Barium sulphide (BaS). On the production of some of these stones at a meeting in April 1669 it was ordered that since

the person who had the Art for performing that odd effect [be] dead and the way so preparing them thought to be lost with him, these stones should be delivered to Mr Boyle, and he desired to try, whether he could not light upon some way of so preparing them, that they might shine in the dark.[339]

The loss of the 'Art' is likely to refer to Vincenzo Cascariolo's discovery in 1603 of a white stone found on Mount Paderno near Bologna, which had a phosphorescent quality following exposure to the sun. The loss was bemoaned in an article published in January 1667's edition of *Philosophical Transactions* in the hope that 'some happy Genius [might] light upon the same or the like skill'.[340] Boyle's report on the conditions under which the stones would emit light is not apparent in the minutes, whilst a donation four years later, in February 1673, of an 'Italian Bolonian stone' requested to 'be produced again to make trial of its shining' remains similarly unrecorded.[341]

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[338] RS, Original Journal Book, vol. 14, 20 June 1728, p. 235.
[339] RS, Original Journal Book, vol. 4, 15 April 1669, p. 48.
[340] Anonymous, 'A Relation of the Loss of the Way to Prepare the Bononian Stone for Shining Source', P*hilosophical Transactions*, 1 (1667), 375.
[341] RS, Original Journal Book, vol. 5, 19 February 1673, p. 14.

By January 1677, a donation from Christian Balduinus of a

stony substance or paste which being exposed a little while to the Day light or the flame of a candle will so imbibe the light as to shine in the darke like a glowing coal

was tested in front of the Fellows during two successive weekly meetings. The first 'succeeded pretty well but not so well as expected it being almost night and very dark weather'.[342] Fortunately, the trial the following week was found to verify the claims of its presenters.[343] An extract of Balduinus's letter, published in *Philosophical Transactions*, was accompanied by an editorial note which attested to the success of the trials of the object made before the Royal Society and as part of this note, it was requested that he might 'impart to them the way of preparing the same; to be Recorded in their Register Books, as a perpetual Monument of his ingeniosity and frankness'.[344] These tests appear to have prompted a donation a week later of a further Bolonian stone by John Clayton.[345] Three weeks after Clayton's gift the Society instructed

Dr Mapletoft and Dr Croon to take care of the preparation of this stone in order to make it shine in the dark[346]

Once again, their success or otherwise, does not appear to have been recorded and, as discussed earlier regarding the cultivation of seeds, feedback does not always appear to have been provided when requested. Although tests on the Bolonian stones are unlikely to have resulted in the stones' destruction, and perhaps this was why the Society elected not to retain samples for the repository prior to testing, it does not appear that any of the stones were incorporated into the Society's collection following experimentation since Grew's catalogue only records one Bolonian stone given by

[342] RS, Original Journal Book, vol. 5, 4 January 1677, p. 173.
[343] RS, Original Journal Book, vol. 5, 11 January 1677, p. 174.
[344] Anonymous, 'Extract of a Letter Written to the Publisher, Concerning a Factitious Stony Matter or Paste, Shining in the Dark Like a Glowing Coal, after It Hath Been a Little While Exposed to the Day - or Candle-Light Source', *Philosophical Transactions*, 3 (1668), 788-789.
[345] RS, Original Journal Book, vol. 5, 18 January 1677, p. 176.
[346] RS, Original Journal Book, vol. 5, 8 February 1677, p. 179.

Francis Willughby.[347] The stones' absence was perhaps due to loss, damage, or as a result of the designated experimenters' failure to return the stones given to them.

The interest over fashioning objects to emit light is apparent from a further donation to the repository a little over two years later in April 1679 when

mr. Sleyer presented the society wth. a phosphorus of his own making, affirming it to be a compound substance. and not like the Bononia stone.[348]

The efficacy of Frederick Slare's phosphorus was tested initially by Thomas Henshaw who found that although a glow was produced when the material was exposed to 'the evening light of the air' it was less successful when exposed to other light sources.[349] These findings were confirmed by further trials conducted by both Henshaw and Hooke, who found that exposure to moonlight did not have 'any sensible operation upon it', in other words it did not result in the material shining.[350] Hooke and Henshaw's failure to replicate Slare's success is possibly because unlike Bolonian stones, which emit light due to phosphorescence, the ability of Slare's compound to shine in the dark resulted from chemiluminescence. In contrast to the Bolonian stones, Slare's phosphorus was added to the collection and is discussed at length by Grew.[351]

Donation of material ostensibly for the repository provided the opportunity for object-led experimentation; in other words testing was conducted by virtue of the object being given to the Society. This would generally be carried out on rarer items that were not so available commercially, such as the Bolonian stones, specific types of poison and anatomical abnormalities. This reflects a fairly pragmatic approach on the part of the Society in their treatment of objects, which suggests that they believed if the benefits of conducting a potentially form altering process on an object outweighed their commitment to preservation, then the process be it experiment, dissection or cultivation would be ordered. Although the Society did make attempts to retain a sample of the specimen or a pictorial record of an item's outward appearance, this was

[347] Grew, p. 311.
[348] RS, Hooke Folio, 3 April 1679, p. 316.
[349] RS, Original Journal Book, vol. 6, 10 April 1679, p. 189.
[350] RS, Original Journal Book, vol. 6, 8 May 1679, p. 193 and 15 May 1679, p. 198.
[351] Grew, pp. 353-357.

not always possible. This differed from the Society's general experimentation practices, which tended to be more concept- or experiment-driven and for which material would be procured on the open market and adapted accordingly in order to satisfy the requirements of the experiment in mind. Notwithstanding that a small amount of the repository's natural material participated in opportunity or object-led experiments, in general, once objects were given to the Society and allocated to the repository, they do not seem to have been subject to invasive examination or potentially destructive experimentation. Obviously there were a small number of exceptions where items were requisitioned from the repository for testing such as some samples of stone from Lough Neagh, which in April 1684 were tested to see if a sample of the stone contained iron and later, in November 1690, to ascertain the effect of fire on the specimen.[352] In a similar way to material tested prior to accession into the repository, the Lough Neagh petrifactions provided a uniquely interesting opportunity to learn more about a natural phenomenon which outweighed the Society's commitment to preserving the specimen in its entirety. Consequently, part of the stone was broken off for testing, though like the seeds and poison, a substantial part of the specimen was kept within the Society's collection.

By the early part of the eighteenth century, the Society appears to have experienced a general loss of interest in experimenting with the natural material donated to the repository. This seems to cohere with accounts of the Society's more general experimental activity, which was particularly prevalent during the late seventeenth century when experiments would be conducted in front of the Fellows at the Society's weekly meetings. However, as Marie Boas Hall identifies, the practical experimental aspect of the Society's work appears to have declined in the ten years prior to Newton's presidency and continued to do so during the eighteenth century.[353] Larry Stewart argues, that 'practising experimentalists' looked beyond Gresham

[352] RS, Original Journal Book, vol. 7, 9 April 1684, p. 234 and RS, Original Journal Book, vol. 10, 5 November 1690, p. 10.
[353] See Marie Boas Hall, *Promoting Experimental Learning: Experiment and the Royal Society 1660-1727* (Cambridge: Cambridge University Press, 1991), p. 120. The decline of experimentalism at the Society more generally in the eighteenth century is commented on by numerous scholars including David P. Miller, '"Into the Valley of Darkness": Reflections on the Royal Society in the eighteenth century', *History of Science*, 27 (1989), 155-66 (p. 157), David Elliston Allen, *The Naturalist in Britain: A social history of truth* (Princeton: Princeton University Press, 1976), particularly pp. 12-17 and J. L. Heilbron, *Physics at the Royal Society during Newton's Presidency*, (Los Angeles: University of California, 1983) pp. 104-9.

College in the eighteenth century for other sites in which to practise science,[354] whilst Andrea Rusnock notes that the Society's correspondence networks played a progressively more prominent role in the Society's eighteenth-century weekly meetings as their experimental activity became increasingly marginalised.[355]

Whilst experiments during the eighteenth century were markedly less frequent than in the earlier period, some did still occur. Similarly, with respect to objects given to the repository, if circumstances were such that an opportunity or object-led experiment or dissection was sufficiently interesting, then it would be conducted such as the dissection of the lobster discussed previously or Silvanus Bevan's analysis of mineral water given by William Stukeley in April 1736.[356] Similarly, between 1703 and 1769, few items were requisitioned for testing, though the worsening state of the Society's mummy donated by Henry Howard in October 1667,[357] was by 1763 'so far decayed as to be useless and offensive' and the Society decided that it ought to 'be removed, or otherwise destroyed, in the most effectual manner'.[358] This provided the chance to inspect the mummy prior to its being disposed of. Interestingly John Hadley's house, rather than the Royal Society was used for the dissection and the findings were published in a letter to *Philosophical Transactions* written by Hadley in 1764.[359] Still Hadley might have ultimately regretted the opportunity to examine the mummy since he died soon after and Richard Gough notes in his 1780 *British Topography* that Hadley's death

> was ascribed to this examination, and to confirm it, it was added that some members (I think Dr Parsons for one) had complained of its bad smell.[360]

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[354] Larry Stewart, 'Other Centres of Calculation, or, where the Royal Society didn't count: commerce, coffee-houses and natural philosophy in early modern London', *British Journal for the History of Science*, 32 (1999), 133-53 (p. 140).
[355] Rusnock, p.168.
[356] RS, Original Journal Book, vol. 16, 15 April 1726, p. 308.
[357] RS, Original Journal Book, vol. 3, 24 October 1667, p. 134.
[358] RS, Original Journal Book, vol. 25, 17 November 1763, p. 144.
[359] RS, Original Journal Book, vol. 26, 12 January 1764, p. 21 and published in John Hadley 'An Account of a Mummy, Inspected at London 1763. In a Letter to William Heberden from John Hadley', *Philosophical Transactions*, 54 (1764), 1-14.
[360] Richard Gough, *British topography. Or, an historical account of what has been done for illustrating the topographical antiquities of Great Britain and Ireland*, 2 vols (London: T. Payne and Son, 1780), I, p. 662.

For the most part, the 'philosophical and usefull purposes' to which the repository's objects were put seem to relate much more to the repository as a 'storehouse' with items being kept for the sake of observation and preservation, more akin to the reference work described by Hooke and which was noted at the beginning of this chapter.[361] Prior to 1700, there is evidence of items being requested for further observation during meetings such as a glass urn found whilst digging cellars in Spitalfields, London and given to the Society by Christopher Wren.[362] In addition, notwithstanding that less importance appears to have been placed on privileging the exterior form of the models and instruments in the repository's collection during this early period, the repository appears to have functioned as a place where records of machines could be kept and referred to. For example, when Edmund Halley showed a design for measuring the altitude of the sun whilst at sea, Hooke said that he had 'long since invented such an Instrument', which, as was typical of Hooke, he went on to describe 'was yet more compendious' than that of Halley. As evidence for his claims, Hooke requisitioned the model of his instrument from the repository in addition to showing the textual record in Sprat's history of the Society.[363] Whilst this was perhaps not a patent dispute, the object in the repository aided in answering who had priority in the design of a piece of equipment by augmenting the textual account in Sprat by displaying the physical record. This also seems to recall the discussion of the previous chapter where three-dimensional material was used to augment a written account.

Later and in fact throughout the eighteenth century, specimens from the repository were drawn upon as part of the Society's wider debates of natural phenomena, particularly during the show and tell sections of their meetings. For example, in January 1741 on the subject of bladder stones 'The great stone take out of the Bladder of an Ox was ordered up from the Repository to shew the manner wherein the flakey coates on the surface are broken off in several places'.[364] Whilst in May 1752, several items from the repository were shown as part of a discussion on the formation of fossils.[365] However from the 1730s onwards, president of the Society, Sir

[361] Unlike natural items, artificial material, specifically scientific instruments appear to have been treated very differently which will be discussed in detail in chapter four.
[362] RS, Original Journal Book, vol. 7, 2 April 1684, pp. 229-30. The original donation is recorded in RS, Original Journal Book, vol. 6, 22 August 1678, p. 124.
[363] RS, Original Journal Book, vol. 78, 23 March 1692, p. 78.
[364] RS, Original Journal Book, vol. 18, 22 January 1741, p. 186.
[365] RS, Original Journal Book, vol. 22, 28 May 1752, p. 143.

Hans Sloane's collections featured increasingly strongly in the Society's meetings; when specimens were required to augment discussions, Sloane's objects were used in addition to objects from the repository, and often instead of them. For instance, in March 1735, upon Peter Collinson's exhibition of two mantises, Sloane also showed a mantis from his collection,[366] and following a letter about a polypus in June 1738, Sloane once again showed an example from his museum.[367]

Similarly, later in the eighteenth century, references to specimens in the British Museum, which was founded on Sloane's collection, were made during the Society's meetings. For instance, as part of Taylor White's paper on cinnamon, read before the Society in December 1758, he advised that

> he has no specimens from Ceylon, but as there are in the British Museum several specimens which were undoubtedly brought from Ceylon, he has traced exactly their figures, which he has exhibited to the Society.[368]

Rather than steering the Society to physical specimens held in their own collections or bringing samples, seemingly drawings of British Museum specimens together with a direction to the Museum's holdings were deemed to suffice. However, this perhaps also demonstrates the close relationship between the British Museum and Royal Society, and significant overlap of Fellows, Trustees and staff, as noted in the first chapter. Given this crossover of personnel, perhaps Fellows of the Royal Society might be viewed as having privileged access to the British Museum, so a reference to specimens in the Museum's collection would be relatively easy to view.

Still, the Royal Society appears to have played an important role in the British Museum's work. In fact, as the second chapter briefly noted, there is evidence that specimens donated to the Museum, would be shown at the Society prior to their being accessioned into the Museum. For example, an asp from Egypt sent to the British Museum by Wortley Montagu was displayed by William Watson at a meeting of the Royal Society in June 1773 some eight days prior to its being officially recorded in the British Museum's 'Book of Presents', where all new accessions to the Museum

[366] RS, Original Journal Book, vol. 16, 13 March 1735, p. 108.
[367] RS, Original Journal Book, vol. 17, 1 June 1738, p. 271.
[368] RS, Original Journal Book, vol. 24, 21 December 1768, p. 215.

were noted.[369] Whilst this may have been the result of administrative tardiness, the 'Book of Presents' recorded that the asp was received from Wortley via Watson, so it seems that Watson's exhibition of the asp to the Society occurred prior to its presentation to the British Museum's Trustees. This is similar to Matthew Maty's exhibition of items from Vesuvius, discussed in the second chapter, which he showed to the Society as part of his paper on the material emitted from the volcano's recent eruptions, the day before the objects' official presentation to the Museum. Again as noted in the previous chapter, this indicates that although there may have been a reluctance to deposit items in the repository, the Royal Society still occupied a central intellectual role in organising and disseminating information. The record of the knowledge acquired thanks to the observation of material culture was lodged with the Royal Society, but the item itself which played an instrumental role in producing the knowledge was lodged in the national collection. This splitting up of information between textual account to the Society and object to the British Museum may have sown the seed of the superiority of the national collection with respect to objects, which potentially rendered the Royal Society's repository redundant.

One of the chief uses the Royal Society's collection of natural objects was put to by Fellows and external agents alike seems to have been to aid in specimen identification. Of particular interest throughout the eighteenth century was the Society's collection of supposed hippopotamus and elephant teeth and bones. For instance in 1745, Henry Baker showed a 'monstrous large tooth' from the River Nile, which was believed to have come from 'some very large amphibious animal'. During the period, the hippopotamus was believed to be an amphibian, so the tooth was compared to the repository's collection of 'hippopotamus teeth' to assess whether there was any resemblance between the two, the result being negative.[370] The hippopotamus teeth, in addition to the Society's collection of elephant teeth and bones, were also drawn upon as a point of comparison by William Hunter in 1767. Hunter was trying to identify some bones found near Ohio River, which were initially in the possession of the Earl of Shelburne and who donated the bones to the British Museum soon after. Of particular interest was the identification of what is now

[369] RS, Original Journal Book, vol. 28, 10 June 1773, p. 148 and BM, Book of Presents, 18 June 1773, no pagination.
[370] Royal Society, Original Journal Book, vol. 19, 24 January 1745, p. 345.

accepted to be the jawbone of a mastodon (*Mammut americanum*), which is currently on display in the British Museum's 'Enlightenment Gallery'. It was initially identified as an elephant's jawbone, as were the bones found with it. Hunter was keen to disprove this and demonstrate that in fact the jawbone and assorted bones had more in common with what he termed the 'elephant of Siberia', or the mammoth, than what he called 'the real elephant'. In addition to studying the collections at the British Museum and several private cabinets, he also assessed those at the Royal Society examining

> all the fossil teeth, as they are called, in the Museum of this Society, and the head and teeth of an hippopotamus.[371]

Hunter was able to demonstrate that the jawbone was sufficiently different from an elephant's for it to be a distinct species and his findings were published in *Philosophical Transactions* in early 1768.

Whilst Hunter's conclusion that the bones bore more resemblance to the mammoth than the 'real elephant' was broadly correct, in fact the mastodon only bears a superficial resemblance to the mammoth. Indeed, the difference between the two species is particularly apparent in the shape of their teeth; the woolly mammoth's molars are high crowned and suited to grazing, whilst the blunt cones of the browsing mastodon's molars aided in eating high growing vegetation. The problem in using the Society's collections, an issue which is likely to have pervaded all the collections that Hunter drew on, was that species identification was at best tentative. For example, the most recently donated elephants' teeth that Hunter may have used amongst the repository's holdings were some given by Peter Collinson in 1767 and which were also found near the Ohio River.[372] Collinson appears to have had similar doubts over what type of elephant the teeth might have come from. Drawing on the Royal Society's collection, in particular elephants' teeth from Peru sent to the repository in 1766, and some from Siberia, which were already part of its collection, he described

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[371] William Hunter, 'Observations on the Bones, Commonly Supposed to Be Elephants Bones, Which Have Been Found Near the River Ohio in America', *Philosophical Transactions*, 58 (1768), 34-45.
[372] RS, MS 419, p. 11.

that ‘the molares or grinder teeth […] are thought not to resemble those of the elephant as known to us; nor yet of any other animal at this day known’.[373]

Hunter is likely to have looked at further elephants’ teeth from the repository, including the grinder of animal which was identified as possibly an elephant, whale or other sea animal donated by an unknown source, though which was is likely to have come from the Hubert collection. It was misidentified in Grew’s catalogue as being the ‘petrifyd tooth of a Sea Animal’.[374] It also featured in Hooke’s ‘Discourse on Earthquakes’ who recognised that it was 'the petrified Grinder of some large Animal, possibly of a Whale or Elephant'.[375] Given that Hooke’s identification included the possibility that the tooth could have been an elephant’s means that it may have been included amongst the elephant teeth used by Hunter and certainly it would have been classified under the ‘fossil teeth’ that Hunter was presented with to study. Still, Hooke’s identification was speculative at best and does not appear to have been acted upon since both the Society’s manuscript catalogues from circa 1730 and 1763 record under their fossil collections: ‘a very great double tooth or grinder’, without noting the animal from which it was derived.[376] In fact, the molar also belonged to a mastodon and was correctly identified following its incorporation into the British Museum’s collection and can currently be viewed in the Museum’s Enlightenment Gallery, in the case directly above Shelburne’s jawbone of the mastodon.

Even the hippopotamus head and teeth that Hunter used were incorrectly identified. They were found by John Somner in 1668 whilst he was digging a well in Chartham. Although initially the specimens were believed to have belonged to a sea monster, by the time they were donated to the Royal Society, they had been reidentified as hippopotamus bones.[377] An account of the find was published in a pamphlet headed the *Chartham News*, which was reprinted in *Philosophical Transactions* in 1701.[378] The publication led to a number of letters being sent to the

[373] RS, Original Journal Book, vol. 26, 26 November 1767, p. 661.
[374] Grew, p. 256 and fig. 19.
[375] Hooke, ‘Discourse on Earthquakes’ in *Posthumous Works*, ed. by Waller, p. 285 and tab 5.
[376] See RS, MS 413, p. 110 and MS 414.
[377] The donation is recorded in RS, Original Journal Book, vol. 4, 12 January 1671, p. 164.
[378] See William Somner, *Chartham News, or, A Brief Relation of some strange Bones there lately digged up, in some grounds of Mr John Somner of Canterbury: written by his brother, Mr William Somner, late auditor of Christ Church, Canterbury, and register of the Archbishop's court there, before*

Royal Society later that year discussing what species the teeth may have come from and how they might have come to be in Chartham. John Luftkin argued that they were elephant's teeth buried during Roman times.[379] Stephen Gray accepted that the bones may have been those of an elephant, but given the type of clay the bones were found in, believed them to be much older and, particularly if the bones were those of a hippopotamus, were there as a result of 'that Great Catastrophy', Noah's flood 'when the greatest part of its Animals were destroyed by the sea & earths mutually changing their places'.[380]

By 1716, the question of whether the bones belonged to an elephant or hippopotamus appears to have been resolved. Thomas Molyneux wrote to the Society in June of that year describing how teeth found in County Cavan in Ireland, which he compared to teeth and bones held by a variety of collections including that of the Royal Society, Hans Sloane and the collection at Brown's Coffee House in Westminster, had been part of a young elephant's.[381] He concluded on the basis of his identification, that he agreed with Somner's assessment that the bones were of a hippopotamus because 'they no way seem to agree either in Shape or Make […] with the Teeth of the Elephant'.[382] Included in his analysis were illustrations of what he had now determined to be a hippopotamus and also what he believed to be an elephant's molar, discussed above.[383] After Molyneux's findings had been read to the Society, the repository's teeth together with those from Hans Sloane's 'incomparable collection of Natural rarities' were inspected in addition to the skull and teeth from Brown's Coffee House in Westminster.[384] This seems to have largely been the final

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his death (London: T. Garthwait, 1669) reprinted in *Philosophical Transactions*, 22 (1700 - 1701), 882-893.

[379] 'Letter from John Luftkin to the Royal Society', RS, Original Letter Book, vol. 13, 15 July 1701, pp. 152-5, partially reprinted in John Luftkin, 'Part of a Letter from Mr John Luftkin to the Publisher, concerning some large Bones, lately found in a Gravel-Pit near Colchester', *Philosophical Transactions*, 22 (1700-1), 924-6.

[380] 'Letter from Stephen Gray to the Royal Society', Royal Society, Original Letter Book, vol. 13, 11 December 1701, pp. 272-4. See also two letters 'From John Wallis to the Royal Society', Royal Society, Original Letter Book, vol. 13, 20 September 1701, p. 156 and pp. 165-7 partly reprinted in John Wallis, 'A Second Letter of Dr Wallis to the Publisher, relating to Mr Somner's Treatise of Chartham News', *Philosophical Transactions*, 22 (1700-1), 1022-38.

[381] RS, Original Journal Book, vol. 12, 14 June 1716, p. 119. His letter to the Society was published in Thomas Molyneux, 'Remarks Upon the Aforesaid Letter and Teeth', *Philosophical Transactions*, 29 (1714 - 1716), 370-384.

[382] Molyneux, p. 382.

[383] Molyneux, figs. 2 and 7 respectively.

[384] Molyneux, p. 383.

word on the identification of the jaw and teeth and the Society's circa 1730 manuscript catalogue records them, though perhaps slightly hesitantly, as

> Part of the upper jaw of a strange head, with some fragments of other bones & three very great double teeth or Grinders from Chartham, described by William Somner in his Chartham news, & supposed by him to belong to the hippopotamus.[385]

The later catalogue is more cautious still, describing them by replicating the first part of the description of 'part of the upper jaw of a strange head, with some fragments of other bones & three very great double teeth or Grinders', but omitting the speculative addition that they might come from a hippopotamus.[386] It was not until the transfer of the head and teeth to the British Museum, that it was realised the remains belonged to a Woolly Rhinoceros, which will be discussed further in the fourth chapter.

Given these examples of the Society's misidentification of its fossil specimens meant that Hunter's findings, although to an extent correct, were inevitably flawed. The Society's difficulty in identifying specimens, particularly their fossil collections does appear to have been acknowledged throughout the repository's life. For example, during the early period Hooke noted of a 'great Bone in the Repository' found in Norfolk given by Thomas Brown that it 'seems to have been the Leg-bone of some Elephant, if it be not some Bone of the Fin of some Whale; 'tis equally admirable which soever it may be found to be by one skill'd in the Osteology of those Creatures.'[387] Similarly, much later in Collinson's analysis of possible elephant teeth, discussed above, he confessed that he did not what animal they came from. Correct identification relied on the improved zoological knowledge of the specimens' nineteenth-century curators, which might be attributed in part to the increasing specialisation of individuals in branches of natural philosophy rather than attempting the impossible task of mastering natural philosophy as a whole.

Despite the misidentification of some of its specimens, the repository's natural objects appear to have been a trusted source of information for a variety of experimenters and naturalists. For example, a paper read before the Society by

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[385] RS, MS 414.
[386] RS, MS 413, p. 110.
[387] Hooke, 'Discourse on Earthquakes' in *Posthumous Works*, ed. by Richard Waller, p. 439.

Frederick Slare in July 1685 described that, as part of his experiments on cobalt 'in order to the discovering the Nature of Zaffer', he consulted the repository's mineral collections. Hooke also appears to have drawn on the Society's collections; as part of his 'Discourse on Earthquakes', he described and figured a number of the repository's objects such as a star fish and the mastodon tooth mentioned above, in addition to drawing on the repository's collection to contribute to the argument of his lecture on the origin of fossils.[388] Similarly, in the early part of the eighteenth century, various requests were made to borrow specimens including William Sherard, who in December 1723, borrowed some of the plants from the repository and, in March 1725, William Cheselden, who was loaned the bones of several 'exotick animals' to complete descriptions for his book on comparative anatomy.[389] Requests to use specimens were less apparent in the middle part of the repository's life though in December 1744 Peter Collinson was allowed to borrow a scarab beetle donated in the same month by George Holmes which he returned and produced a paper on in January 1745.[390] More extensive use of the collection was made some years later, for instance in May 1770, Tesser Samuel Kuckuhn offered to put the repository's collection of birds in order, if the Society would let him inspect their British plants, which the Society agreed to.[391]

A selection of the repository's items were similarly consulted and featured as exemplar specimens in various naturalists' published works, again predominately prior to 1730 and in the 1770s. Michael Hunter notes that specimens from the repository appeared in a range of publications including Walter Charleton's *Onomasticon zoicon* and Francis Willughby's *Historia Piscium*.[392] Various natural

[388] See for example Hooke, 'Discourse on Earthquakes' in *Posthumous Works*, ed. by Richard Waller, p. 286 and tab v, figs 15 and 16 and pp. 438-450.
[389] See RS, Original Journal Book, vol. 13, 12 December 1723, p. 330 and 11 March 1725, p. 455 respectively. References to the Society's collection are not however mentioned in either of William Cheselden's subsequent editions of the text. See *The Anatomy of the Human Body*, 3rd edn, (London: W. Bowyer, 1726) and 4th edn (London: W. Bowyer, 1730).
[390] For the loan and return respectively, see RS, Original Journal Book, vol. 19, 13 December 1744, p. 324 and 10 January 1745, p. 338.
[391] RS, MS634, 29 March 1770, no pagination.
[392] Hunter notes the extensive use of Royal Society specimens in Walter Charleton's, *Onomasticon zoicon, plerorumque animalium differentias & nomina propria pluribus linguis exponens. Cui accedunt Mantissa Anatomica; et quædam de variis fossilium generibus* (London: Apud Jacobum Allestry, 1668), pp. 84, 96, 112-6, 186, 246-7 and 290 and in Francis Willughby's, *Francis, F. Willughbeii ... de historia piscium libri quatuor ... totum opus recognovit ... supplevit, librum etiam primum et secundum integros adjecit J. Raius* (Oxford: E. Theatro Sheldoniano, 1686), plate 122 in Hunter, 'Between Cabinet of Curiosities and Research Collection', pp. 129-31.

objects continued to be included in naturalists' works, in the early part of the eighteenth century. For example, Richard Bradley drew extensively on the collection in his *Philosophical Account of the Works of Nature* published in 1721 with eleven of his illustrations being based on Royal Society specimens.[393] In addition, Mark Catesby's *Natural History of Carolina, Florida and the Bahama Islands*, published in 1731, used the Royal Society's specimen of a trunk turtle (*Testudo arcuata*). Catesby added to his account of the turtle that 'I never saw one of these Turtles, they are not common, being but rarely taken', which indicates that although the state of the objects in the repository was at times questionable, the Society are likely to have possessed a selection of rare objects of particular importance to naturalists.[394]

Still the worsening state of the repository during the mid eighteenth century appears to have proved off-putting to the repository's would-be users. For example, in a discussion of prints from George Edwards *Gleanings of Natural History*, it is noted that the drawings were made from specimens in the collections of 'Mr Edwards's Patrons and Friends, and most of them Fellows of the Royal Society'.[395] Significantly Edwards who was also a Fellow of the Royal Society drew not on the collections of the Society itself, but on those of its members. In May 1759, a year after the publication of *Gleanings*, Edwards similarly commented on a parcel of birds he had received from land north of the River Amazon, that he

> cannot recollect ever to have seen a single Bird of them, tho' he has examined whatever relates to Birds in all the Collections of his Friends, as well as in the British Musaeum.[396]

Once again Edwards overlooked the Society's repository in favour of other private and civic collections. By the latter part of the eighteenth century, this reluctance to use the collection appears to have reversed as Thomas Pennant drew on the collection, in

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[393] Bradley, see plate IV, fig. iii, plate VIII, fig i, plate IX, figs i, ii and iv, plate IX, figs i, ii and iv, plate XII figs i and ii and plate XXIV, fig x.
[394] Mark Catesby, *The Natural History of Carolina, Florida and the Bahama Islands ... Histoire naturelle de la Caroline, la Floride, & les Isles Bahama*, (The Author: London, 1731), p. 40.
[395] RS, Original Journal Book, vol. 25, 18 November 1762, p. 209 and see George Edwards, *Gleanings of natural history, exhibiting figures of quadrupeds, birds, insects, plants, &c... with descriptions... designed, engraved, and coloured after nature* (London: for the author, at the Royal College of Physicians, 1758).
[396] RS, Original Journal Book, vol. 24, 10 May 1759, p. 309.

his *Arctic Zoology*, *Synopsis of Quadrupeds* and *History of Quadrupeds*.[397] Most notably Pennant recorded and figured the Society's *Bos nanus* specimen, which is the type of the species and is now held by the Ungulate Mammal Section of the Natural History Museum at South Kensington and is one of the oldest examples in their collections.[398]

Significantly, the repository featured amongst of a range of collections drawn upon by interested parties during the Society's weekly discussions and show and tells, as part of specimen identification and in naturalists' published works,. In contrast to Grand Duke of Tuscany, Cosmo III's prediction in 1669 that in time the repository would be 'the most beautiful, the largest and the most curious, in respect to natural productions that is anywhere to be found';[399] the repository was, in reality, one of a number of storehouses of nature in London. In their analysis of elephant bones, both Molyneux, in the early part of the eighteenth century and Hunter in the latter, chose to survey examples of specimens in various collections, including that of the Royal Society. Particularly in species' identification, a variety of examples were needed to assess what a specimen might be, which necessitated the use of either one very large and diverse collection, which even allowing for Sir Hans Sloane's or the British Museum's holdings did not exist in eighteenth-century London, or of multifarious collections. Consequently, from early in the eighteenth century, the repository was one of a raft of collections that might be consulted and was often not the first port of call, whilst in the mid eighteenth century, would often not be called upon at all. However, it also suggests a different way of assessing the history of collections during the period, thinking not in terms of a specific collection and how it might have been used to answer various questions, but how a specific problem might be solved by consulting myriad collections. Still the worsening state of the repository both in terms of condition and organisation appears to have led naturalists to prefer other collections over the repository. John Macky commented in his *A Journey Through England* 'I must own that I have seen much finer Collections abroad than this here',[400] and

[397] See Thomas Pennant, *Synopsis of Quadrupeds* (Chester: J. Monk 1771), pp. 9, 54, 92, 180, 349 and plate IX, fig iii, *History of Quadrupeds* (London: B. White, 1781), volume 1 pp. 28, 110, 111, 160 and 270 and volume 2, pp. 435, 504, 521, and 532 and *Arctic Zoology* (London: Henry Hughes, 1785), volume 1, pp. 78, 111 and 133 and volume 2, pp. 356, 525, and 579.
[398] Pennant, *Synopsis of Quadrapeds*, p. 9, plate IX, fig. iii.
[399] Magolotti, p. 188.
[400] Macky, p. 260.

although he is referring to collections on the continent, the repository appears to have been surpassed by private and civic collections alike in London and in Britain more generally, not least by that of their own president, Sir Hans Sloane.

Unlike the natural objects which appear to have been drawn upon chiefly before 1730 and in the 1770s, artificial material, principally scientific instruments, were borrowed throughout the repository's life. For example, following the gift from Stephen Gray's nephew, John Gray of his uncle's electrical equipment in June 1737,[401] the items were borrowed by John Desaguliers also in June 1737 and by Granville Wheler in April 1738.[402] In November 1741, Henry Baker borrowed Leuwenhoek's glasses and gave a paper on them.[403] Again, in 1741, though a few months earlier in August of that year, George Parker, 2nd Earl of Macclesfield, and later president of the Society, borrowed several of the telescopes and their associated apparatus made by Christiaan Huygens, in addition to the micrometer made by Graham and given by James Bradley, discussed previously. The Society may however have regretted this particular loan since the equipment was not returned until almost twenty years later in June 1765, a year after Macclesfield's death.[404]

Seemingly, comparatively little of the collection was actually used. As the second chapter identified, the Royal Society's network of correspondents, both in Britain and abroad, would often forward samples of natural objects in order to augment their written observations and findings, particularly in the years before 1700. Notwithstanding the importance that the early Royal Society placed on obtaining the object upon which an account was generated, once received, it became largely subordinate to the textual account that contained and disseminated the information gleaned from the item, in a similar way to the fact that once a written account was

[401] The donation is recorded in RS, Original Journal Book, vol. 17, 9 June 1737, p. 108 and a letter concerning it is in 'Letter from J. Gray to Cromwell Mortimer, Royal Society Letter Book, vol. 1, 22 June 1737, p. 17.
[402] For Desagulier, see RS, Original Journal Book, vol. 17, 23 June 1737, p. 117 and for Wheler see 'Letter from Granville Wheler to Cromwell Mortimer', RS, Original Letter Book, vol. 24, 25 April 1738, p. 318.
[403] RS, Original Journal Book, vol. 18, 12 November 1741, p. 286.
[404] The loan to Macclesfield is recorded in RS, MS 630, 10 August 1748, p. 3 and 29 August, p. 4 and Original Council Minutes, vol. 4, 29 August 1748, p. 6. Arrangements regarding the return of the loan are noted in RS, 'Rough Minutes of Meetings of the Council of the Royal Society, 1760-1764', MS 631, 10 May 1764, p. 434, 14 June 1764, p. 443 and 4 October 1764, p. 449 and finally 'Rough Minutes of Meetings of the Council of the Royal Society, 1764-1767', MS 632, 12 June 1765, no pagination.

copied into the Society's official records or was published in *Philosophical Transactions*, the official or printed copy became the primary way in which the data was engaged with. The object, like the original letter, became part of a raft of information technologies which authenticated the official written or printed account. As Adrian Johns suggests 'the repository to an extent represented an archive of their material contributions'.[405] Marjorie Swann extends this saying that it was an 'analogue to the Society's Register Books'[406] This sense of 'analogue' is perhaps flattering to the status of the object since by the time it was filed away in the repository, the textual account had primacy and the material itself was filed away, just like the initial account which accompanied it, latent, awaiting requisition.

In fact the bulk of the discussion so far has presupposed that 'use' of the repository entailed a physical engagement with its objects, however, as the discussion above and the first chapter suggests, the latter in relation to Henry Curzon's account of the collection, this is perhaps not the case. Moreover, naturalists and other interested parties appear to have drawn on the collection in their studies via Grew's catalogue. This is apparent in numerous letters to the Royal Society where Grew is cited. For instance a letter from Griff Hatley on 'form'd stones', published in *Philosophical Transactions* in 1684, referred to items and their descriptions in Grew's catalogue, as did James Douglass in his description of a flamingo, published in 1715, and James Parson's discussion of 'Phocae Marinae', published in 1751.[407] In addition, page references to specimens in Grew's account of the collection are evident in the Ashmolean Museum's first manuscript catalogue. For example the 'Book of the Principal of Brasenose College' cross referenced various specimens in the Ashmolean's collection to those described in Grew as being held by the Royal Society including the 'flemming of Surinam', the 'google-eyed beetle' and the 'skull of a horned hog'.[408] Although direct references made to the repository without a citation to

[405] Adrian Johns, *The Nature of the Book: Print and Knowledge in the Making* (Chicago: University of Chicago Press, 1998), p. 487.
[406] Swann, p. 85.
[407] Griff Hatley ' A Letter concerning some form'd Stones found at Hunton in Kent' in *Philosophical Transactions*, 14 (1684), 463-5 (p. 465), James Douglass, 'The Natural History and Description of the Phoenicopterus or Flamingo; With Two Views of the Head, and Three of the Tongue, of That Beautiful and Uncommon Bird' in *Philosophical Transactions*, 29 (1714-16), 523-41 and James Parsons, 'A Dissertation upon the Class of the Phocae Marinae', *Philosophical Transactions*, 47 (1751-2), 109-22.
[408] MacGregor and Hook, pp. 96, 97, and 98 with reference to Grew and p. 60, fig. 13 and p. 27 respectively.

its printed catalogue are apparent, seemingly these are outnumbered by those to Grew. This is probably for pragmatic reasons; a page reference is much easier to access than an object in London. However it also seems that the text which communicated and contained the object became the primary source of communicating the knowledge the object participated in creating. In the example of Grew's catalogue, although it was perhaps not the primary way of engaging with and using the repository, it did become a key method. Its text became the gateway through which a larger audience might interact with the Society's collection and allowed a kind of virtual visit to the repository. Moreover, in a sense, Grew's catalogue was the reference work of the three-dimensional reference work that Hooke described his ideal repository would take. Still Hooke would have been heartily displeased that naturalists thought it sufficient to engage with specimens via text and pictures, rather than physically 'reading' the book of nature.

In addition, a number of guide books reprinted sections of Grew's catalogue to illustrate the objects contained in the repository; a practice that is evident as late as 1753 in John Mottley's *History and survey of the cities of London and Westminster*, by which time the repository was an incredibly different entity, not least through the loss and damage of its specimens in the intervening years.[409] The wide use of Grew, though undoubtedly valuable in communicating what was contained in the collection in the late 1670s and in raising the Society's profile, also had a negative impact.[410] By textually recording the repository's collection in a catalogue, but not updating it served to fix the identity of the repository and its collection. As part of a wider discussion of catalogues as forms of propaganda, Robert Harbison identifies how museum catalogues produce an idealised account of a collection, indexing a world in words that have already been indexed spatially within the museum space.[411] Based on this the expectation from visitors was that a trip to the repository would be to view the physical manifestation of Grew's catalogue. This may go some way to explaining Uffenbach's (and others), much discussed disappointment with the repository; the

[409] John Mottley, *The history and survey of the cities of London and Westminster, Borough of Southwark, and parts adjacent. ... The whole being an improvement of Mr. Stow's, and other historical writers and surveys. ... By a gentleman of the Inner-Temple* (London: M. Cooper, 1753), pp. 115-24.
[410] Swann, p. 85, for example, argues that the repository 'provided a physical site of reciprocal identity formation for the Royal Society and its virtuoso supporters'.
[411] Robert Harbison, *Eccentric Spaces* (Cambridge, Massachusetts: MIT Press, 2001), p. 153.

catalogue raised Uffenbach's expectations far beyond that which an actual visit could satisfy.

The use of the repository as a space

Over the last twenty years, the locations in which science was practised have received increased critical attention.[412] Drawing on these analyses of space, this section will attempt to extend the previous segment's examination of object usage into a discussion of how the repository as the space which contained the Society's collections was used and how its role changed during the eighteenth century. It will consider how the repository functioned as a tourist attraction, or entertaining space, in addition to an overspill venue where experiments and meetings could take place. It will also reflect upon whether the changing location of the repository had an impact both on its pattern of usage as a location and as a collection of objects.

Michael Hunter identifies that the repository appears to have been a tourist attraction throughout its life and the existence of its collection was noted in numerous guidebooks on London in the eighteenth century.[413] Accounts of visits made between

[412] Drawing together this often quite disparate material, both Robert Kohler and Simon Naylor provide useful overviews of the field. See Robert E. Kohler, 'Place and Practice in Field Biology', *History of Science*, 11 (2002), 189-210 and Simon Naylor, 'Introduction: historical geographies of science – places, contexts and cartographies', *British Journal for the History of Science*, 38 (2005), 1-12. An article produced some years earlier by Adi Ohpir and Steven Shapin, 'The Place of Knoweldge: A methodological survey', *Science in Context*, 4 (1991), 3-21 is also useful in assessing the method by which one might approach the analysis of the spaces in which science was practised. For a sample of the literature on the places in which science was practised see for example Dorinda Outram, 'New Spaces in Natural History', *Cultures of Natural History*, ed. by N. Jardine, J. A. Secord and E. C. Spary, (Cambridge: Cambridge University Press, 1996), pp. 249-265, Crosbie Smith and John Agar, eds., *Making Space for Science: Territorial Themes in Shaping Knowledge* (London: Macmillan Press, 1998) and Shapin, 'House of Experiment', 373-404.

[413] To mention all the guide books that the repository featured in would be far too extensive, but what follows are a select few: Hatton, I, p. 666, Anonymous, *British Curiosities in art and nature; giving an account both antient and modern, ... Likewise an account of the posts, markets, and fair-towns* 2nd edn (London: Sam Illidge, 1728), p. 61, Joseph Pote, *Le guide des etrangers: ou le compagnon necessaire & instructif à l'etranger & au naturel du pays, en faisant le tour des villes des Londres et de Westminstre* (London: Joseph Pote, 1729), pp. 56-7. Subsequent editions published in 1740, 1752 and 1763 also include a description of the repository; see pp. 56-7, 58-9 and 66-7 respectively. See also John Fransham, *The world in miniature: or, the entertaining traveller. Giving an account of every thing necessary and curious; ... and several curious and useful tables* 2 vols (London: John Torbuck, 1740), II, pp. 139-140, Anonymous, *De leydsman der vreemdelingen of, nodigen nuttig, med'gezèel beyde, voor den vreemdeling en inboorling in hunne wandeling door de stéden Londen en Westmunster* (Amsterdam: Dirk onder de Linden, 1759), pp.84-5, Anonymous, *London and its environs described. Containing an account of whatever is most remarkable ... in the city and country twenty miles round it*, 6 vols (London: R. and J. Dodsley, 1761), V, pp. 293-4, John Entick, *A new and accurate history and survey of London, Westminster, Southwark, and places adjacent; containing whatever is most worthy of notice in their ancient and present state*, 4 vols (London: Edward and Charles Dilley, 1766), IV, pp.

1700 and 1710 suggest that guests to the repository would be shown the collection in addition to experiments conducted with its objects. Both Uffenbach and Edward Ward's 'London Spy' describe demonstrations with a magnet where iron filings 'piled themselves on top of each other' and looked 'like the bristles of a hedge hog'.[414] That both were shown the same experiment suggests that they were either guided around the museum by the same person or that there was, at least elements of, a set tour that all visitors took.

The repository also functioned as a space to entertain dignitaries and important visitors to the Society. The 'Hooke Folio', for instance, describes an unnamed count who was shown the repository, library and weather clock prior to attending one of the Society's meetings in December 1669.[415] In April 1682, the Moroccan ambassador was shown the library and the repository as was Prince Borghese, in November 1682.[416] However, by the 1730s, it was not the repository as a scene of engagement with its collection that provided the major attraction, but the experiments that were performed to entertain important guests. For example, during a visit made by the Prince of Wales and Duke of Lorraine in November 1731, their main purpose for being in the room that contained the Society's collection was not to view the repository's objects, but to see a chemical experiment using phlogiston and phosphorus conducted by Joannes Frobenius.[417] Although they were shown two objects, these were perhaps not the most characteristic of the repository; one was a model of a fire engine, the other a multiplying bucket wheel engine. A visit was also made to the library, but not to see the books, rather to see Stephen Gray's electrical experiments. In March 1734, as the Prince of Orange waited in the repository, perhaps not particularly nervously, to find out whether he had been elected as a Fellow of the Society, again, the Society's collection does not appear to have been central to his visit to the site of the repository, rather it was to be 'entertained' by John Desaguliers's demonstration of his new planetarium. Following his election the Prince

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267-8 and Anonymous, *The ambulator; or, the stranger's companion in a tour round London; within the circuit of twenty-five miles* (London: J. Bew,1774), p. vii.

[414] Quarrell and Mare, p. 99 and Ward, p. 58.

[415] RS, Hooke Folio, 11 December 1679, p. 377

[416] RS, Original Journal Book, vol. 7, 26 April 1682, p. 77 and 29 November 1682, p. 105.

[417] The planning of entertainment for the visit is recorded in RS, Original Council Minutes, vol. 3, 15 November 1731, p. 101, whilst the visit is noted in RS, Original Journal Book, vol. 30, 25 November 1731, p. 30.

was treated to a visit to the library, again, not to see its books, but to see Stephen Gray's electrical experiments.[418] Similarly, when the Prince of Modena visited the Society, in November 1735, he too saw electrical experiments and Desagulier's planetarium, this time both in the repository.[419]

The repository had always provided a space in which to conduct experiments It both housed experiments and observations, particularly pre-1700; for instance an inclinatory needle was suspended in the repository in December 1676, whilst, in April 1683, some Egyptian earth was weighed fortnightly until the middle of June and the results compared with similar trials at Oxford.[420] In February 1680, experiments on gold, lead and silver were conducted in the repository,[421] whilst three years later, in February 1683, Edward Tyson dissected a rattlesnake in the repository.[422] However, in general during this period, experiments would be performed in front of the Fellows during their weekly meetings in the meeting room. Before 1700, the repository tended to serve as a place to conduct follow-up testing and where the material evidence of the residual affects of an experiment could be kept, such as Grew's dissections and Papin's medals, discussed previously. Seemingly, the repository was more a storehouse of knowledge rather than a site of knowledge production. However, during the 1730s, and in the same way as visits of dignitaries became concentrated on the experiments and demonstrations conducted in the repository rather than the objects it was constructed to contain, experimentation moved to the repository. Although it would perhaps be inaccurate to suggest that repository acted a site of knowledge production, certainly it appears to have functioned as a site of knowledge performance.

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[418] RS, Original Journal Book, vol. 15, 7 March 1734, pp. 400-1
[419] RS, Original Journal Book, vol. 16, 6 November 1735, p. 188.
[420] See RS, Original Journal Book, vol. 5, 7 December 1676, p. 171 and RS, Original Journal Book, vol. 7, 25 April 1683, p. 147 and 'Letter from Robert Pitt to Francis Aston' RS, Original Letter Book, 25 April 1683, pp. 334-5.
[421] RS, Hooke Folio, 12 February 1680, p. 397.
[422] For the manuscript account of the rattlesnake dissection see RS, Original Journal Book, vol. 7, 10 January 1683, p. 119, whilst for the printed version see Edward Tyson, 'Vipera Caudi-Sona Americana, or the Anatomy of a Rattle-Snake dissected at the Repository of the Royal Society in January 1682/3', *Philosophical Transactions*, 13 (1683), 25-46.

For example, in August and October 1731, Cromwell Mortimer conducted experiments in the repository to test the poisonous effects of laurel water on a dog.[423] Whilst in November 1733, the Society adjourned their meeting to the repository to view

> some performances by one Topham a man of great bodily strength through the unusual largeness of the several muscles of his body: with intent to examine the utmost force of his several muscles in their exertion with an engine contrived by Dr Desaguliers.[424]

Experiments conducted by Stephen Gray were shown in the repository twice in March 1734 and once a month later in April 1734.[425] By February 1735, electrical experiments appear to have been conducted in the library.[426] However experiments continued to be carried out in the repository, for instance some 'extraordinary Experiments relating to animal Motion' were shown in November 1738, whilst in June 1742 electricity experiments were once again performed in the repository and, in 1744, a chemical experiment intended to prove the possibility of the 'transmutation of metals' was shown.[427]

Using the repository, as well as the library, for these experiments may have been for numerous reasons; for example, as the first chapter identified, the repository was refurbished during the early 1730s, so it provided a modern and impressive space to entertain guests. In addition, because the type of experiments the Society wanted to conduct are likely to have required a lot of setting up, it was perhaps impractical to assemble them in the meeting room whilst a meeting was meant to be taking place. Finally, the Society were notoriously short of space during their stay at Crane Court and, in early 1753, consulted a carpenter to see how the library and meeting room

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[423] The experiments are recorded in manuscript in RS, Original Register Book, vol. 16, 28 October 1731, p. 218 and 4 November 1731, p. 225. For the published version see Cromwell Mortimer, 'Some Experiments Concerning the Poisonous Quality of the Simple Water Distilled from Lauro-Cerasus, or Common Laurel, Made upon Dogs, at Toppingo-Hall in Essex and others made before the Royal Society in their Repository', *Philosophical Transactions*, 37 (1731-2), 163-73.

[424] The experiments with Mr Topham, the strong man, are recorded in RS, Original Journal Book, vol. 15, 1 November 1733, p. 326, and RS, Original Register Book, vol. 18, 15 and 22 November 1733, pp. 336 and 343, respectively.

[425] RS, Original Journal Book, vol. 15, 21 and 28 March 1734 and 4 April 1734, pp. 404, 408 and 412 respectively.

[426] RS, Original Journal Book, vol. 16, 6 and 13 February 1735, pp. 84, 87 and 89.

[427] See RS, Original Journal Book, vol. 17, 16 November 1738, p. 314, Original Journal Book, vol. 18, 17 June 1742, p. 430 and Original Journal Book, vol. 19, 15 March 1744, p. 222.

might be made 'more commodious for the meeting of the Society and council', so the repository may have been allocated as a place for experiments because of the space it afforded.[428] The use of the repository also suggests that audience expectations of visits to a scientific society changed between the end of the seventeenth century and the 1730s. Initially to stand in a room surrounded by the book of nature would be sufficiently interesting, but by the 1730s, it was expected that exciting experiments with electricity would be performed. This shift in audience expectation perhaps also reflects a wider movement in scientific fashion. Much has been made of the spectacular electrical experiments performed in the 1730s and 1740s, including as Paola Bertucci notes, William Watson's 'electric fires across the Thames' where he attempted to measure the speed of electricity.[429] In the case of the Royal Society's collections, the objects in the purpose-built location to house them were overlooked in favour of the spectacle being performed in the repository space. As the fourth chapter will identify, fashion appears to have played a large part in the fate of the repository's objects once at the British Museum and perhaps this interest in spectacle generally in science played a role in the repository entering its third period of neglect between 1740 and 1763.

The location of the Society's repository and its proximity to the library also seems to be telling in how the repository was used and the way in which it was viewed by its public. When asked to design a building to house the Society in 1668, Christopher Wren sent a letter in June of that year describing the spatial arrangement of the building. The cellar would contain 'a faire elaboratory; then a little shop or two, for forges and hammer-works, with a kitchen and little larder', whilst the ground floor at street level would house the library and repository, with the meeting room on the first floor and a further space in the roof where larger experiments using telescopes might be conducted.[430] On the library and repository specifically, Wren commented that they 'may well bee one room […] the presses for books in one part, and the

[428] RS, MS 630, 18 January 1753, p. 53.
[429] See for example Larry Stewart, 'The Laboratory, the Workshop, and the Theatre of Experiment', and Paola Bertucci, 'Domestic Spectacles: Electrical Instruments between Business and Conversation', both in *Science and Spectacle in the European Enlightenment*, ed. by Bernadette Bensaude-Vincent and Christine Blondel (Aldershot: Ashgate, 2008), pp. 11-24 (pp. 13-4) and pp. 75-87 (p. 77) and Michael R. Lynn, *Popular Science and Public Opinion in Eighteenth-Century France* (Manchester: Manchester University Press, 2006), p. 1.
[430] 'Letter from Christopher Wren to Henry Oldenburg', RS, Original Letter Book, vol. 2, 7 June 1668, pp. 220-1.

presses for raritye in the other.[431] What is significant is that the repository and library had equal status in Wren's design; they were paired together on the same floor and possibly in the same room, which suggests both that they were considered to be complementary rooms and also perhaps intended to be used together. This coheres with the idea, discussed in the second chapter, of objects as little words from God's book of universal nature. Based on this, it perhaps seems obvious that they would be kept with printed works. It may also reflect a residual relation to the repository's predecessors, cabinets of curiosity, where there are examples of collections which would house objects and texts in the same room.

The proximity of the repository to the library is also evident in its actual arrangement in the white or west gallery at Gresham College. As noted in the first chapter, the west gallery, which the Society had been planning to move its collection to during June 1666 did not become a home for the repository until some years later, in the latter part of 1675. It was divided into two parts with the south part housing the repository and the north section containing the library.[432] Initially, the spatial overlap between the repository and library is also reflected textually. For instance, in the 'Hooke Folio', which contained Hooke's rough minutes of the Society's meetings, there is evidence of the term 'repository' being crossed out in favour of the 'library' and vice versa; such mistakes suggest the two were initially closely connected.[433] However, this spatial arrangement was not always prized. In a later design for the Society's house dating from between 1700 and 1706, Wren placed the repository on the second floor and the library on the third.[434] The distance between the two could be for practical reasons because both had grown too large to be housed together, but perhaps also suggests the increasing intellectual distance between the library and repository. Again, this was also reflected actually given that, in 1708, Edward Hatton's *New View of London*, described that the repository was located at the north

[431] 'Letter from Christopher Wren to Henry Oldenburg', RS, Original Letter Book, vol. 2, 7 June 1668, p. 220.
[432] RS, Original Council Minute Book, vol. 1, 29 November 1675, p. 268.
[433] See for example a book given by a Mr Barnard of Oxford which attempted to demonstrate that 'Descartes hypothesis & Doctrine for solving the motions of the seas & tides by the motion of the moon was fals' where Hooke wrote that the book should be sent to the 'repository', which he then crossed out in and replaces with 'library' in RS, Hooke Folio, 15 November 1677, p. 112.
[434] RS, Original Register Book, vol. 9, no date, c. 1700-6, p. 96.

side of the quadrant at Gresham College, whilst the library remained in the south west.[435]

By 1711, when the repository was moved to purpose-built accommodation in Crane Court, the collection was housed in a separate building. Whilst the construction of a building especially for the repository suggests that it was of a high status, or sufficiently well thought of that considerable amounts of money ought to be spent, its distance from the body of the Society, its meeting rooms and library, may have had an adverse effect on the Fellows' perception of the repository. It quickly appears to have become a thoroughfare. Coaches would arrive in the courtyard which the repository's building was set in, and members would walk through the collection to access the meeting rooms in the inner house. In April 1727, the president complained that posts had been set up at the back door of the repository, which obstructed the coaches' approach and access, crucially, not to the repository, but to the meeting rooms.[436] The family who rented a house from the Society would similarly enter their accommodation via the repository. In addition, the distance from the meeting room to the repository may have proved to be inconvenient since, in June 1728, Huygens's telescope and Leuwenhoek's microscopes were moved to the lockable closet of the Council Room.[437] This may have been because the equipment was seen to be safer there than in the repository. Still, it may also be because it was seen to be more convenient to have the items close at hand. In September 1737, it was proposed that 'that one of the Rooms in the House should be fitted up for keeping in it the Instruments, machines and models'. Although a decision on what to do was deferred, the very suggestion perhaps indicates that a judgement was made regarding what was being used most by the Society.[438]

Although objects donated to the Royal Society functioned within the repository in multifarious ways, the majority of specimens do not appear to have been used or commented on beyond their inclusion in Grew's catalogue, if donated prior to 1679, and in inventories compiled periodically during the eighteenth century. If they were used, it was not in sufficiently important work to warrant textual documentation.

[435] Hatton, I, pp. 666-68.
[436] RS, Original Council Minute Book, vol. 2, 14 April 1727, p. 303.
[437] RS, Original Council Minute Book, vol. 3, 24 June 1728, p. 13.
[438] RS, Original Council Minute Book, vol. 3, 13 September 1737, p. 182.

For the most part, the repository was a storage facility with a small number of objects being requisitioned when necessary to augment or facilitate discussion, but generally not active in the production of knowledge following their accession. Donated specimens played a fairly minor role in the Society's experimental practices, though particularly in the repository's early years, provided the opportunity for impromptu experiments to be made. In the years before Hooke's death, there was some attempt to generate knowledge by in some way altering the outward state or physical makeup of objects through cultivation, experimentation and dissection, though from the beginning of the eighteenth century, this use of material seems to have been largely abandoned in favour of using specimens in studies of comparative anatomy and as exemplar specimens in naturalists' work, which seems to agree with the fact that experiments in general did not occur so frequently in the eighteenth century as they did in the period before. The Society's collections played a greater role in comparative observations and were on occasion called upon to facilitate or augment the Society's discussions during their weekly meeting. However such analyses also exposed the repository's failings both in terms of its ability to accurately identify specimens, though this is perhaps a flaw evident in all eighteenth-century collections, and the fact that far from being part of the 'one-stop shop' for knowledge that the Society hoped it would be, it was part of a raft of collections in London which a naturalist might consult as part of their examinations of natural phenomena. Between 1730 and 1770 when the repository's natural objects were perhaps used less frequently than before and after this date, the repository space, particularly between 1730 and 1740 was being used increasingly as a site to perform experiments in front of Fellows of the Society and dignitaries visiting the Society.

Seemingly the repository was much more akin to the reference work described by Hooke, engaged with both actually and virtually via Grew and *Philosophical Transactions*. The majority of specimens would be preserved and considered without resorting to potentially invasive or destructive procedures and in the majority of cases, do not appear to have been used at all. Consequently Edward Ward's 'London Spy' characterisation of the Society's repository collection as 'memorandums of mortality' is perhaps surprisingly accurately; prior to accession specimens played a central role both by participating in the production of an observation and in authenticating the written account thereof, however once accessioned most became subordinate to the

textual processes which sought to understand, record, organise and disseminate the information items produced.

- CHAPTER FOUR -

'[Preserved] out of regard to the memory of Swammerdam'[439]

The Afterlife of the Royal Society's repository

A museum for Exhibition ought to be a Collection framd for the purpose of administering instruction in the form of amusement & thus endeavouring to awake latent curiosity [… and] nothing ought to be exhibited there likely to create disgust or even repugnance.[440]

I began this research project with the aim of writing the life and afterlife of the Royal Society's repository. I assumed that it would be relatively easy to trace a range of the former repository's objects and positively identify them as having Royal Society associations. Whilst I appreciated that natural decay would perhaps impede my search for specimens whose preservation proved problematic during the period, such as mammal and bird skins, I envisaged that the more robust items, such as fossil samples, would have persisted at least into the twentieth century, if not beyond. Having established what had survived, I hoped to be able to examine how the former repository's objects became incorporated into the British Museum's collection, in addition to considering the new narratives and meanings they became immersed in during the nineteenth century as debates over nomenclature raged and natural philosophy fragmented into specialist disciplines. However, as this chapter and the final chapter will demonstrate, my quest to identify objects with Royal Society connections was fraught with difficulty; the problems that the British Museum encountered during the late eighteenth and early nineteenth centuries with regard to the preservation of their natural history specimens in general was considerably greater than I had anticipated. Equally unexpected was how aware the Museum was of its institutional identity, namely that it saw itself as a space that exhibited objects for the public good and which resulted in their disposing of material deemed, for various reasons, to be inappropriate for display, including, I will argue, many of the former repository's items. In fact, across all branches of the Museum's natural history section, now held at the Natural History Museum's South Kensington and Tring sites, comparatively little of the British Museum's early collection remains extant, with the exception, perhaps, of botany. Conclusive identification of the few former Royal

[439] BM, Officers Reports to the Trustees, CE 5, July 1808, fol. 131^{v}.
[440] BM, Original Papers, CE 4, 27 February 1809, fol. 907^{r} (see appendix 3.1)

Society objects that might remain is further hindered by the lack of early documentation at the Museum, which will be discussed in the final chapter, and is exacerbated by the fact that Daniel Solander, who liaised between the two institutions and curated the collection upon its arrival at the British Museum, died less than a year after the repository's transfer.

In spite of the difficulties discussed above, this chapter intends to assess the fate of the repository's objects upon entering the British Museum. Drawing on various manuscript and printed sources, it will begin by assessing the scope of the collection donated to the British Museum before briefly noting the objects that remained at the Society, including a number of their scientific instruments and, anomalously, a set of twenty plant specimens given by Richard Hill Warring in 1776. The chapter will then go on to examine what might have happened to the various branches of natural history which passed into the possession of the national collection. It will become apparent that, with the exception of its botanical material, whilst a great deal of the repository's collection suffered from the preservation issues which affected much of the British Museum's early holdings, equally challenging to the objects' existence was the fact that many fell into the category of being outdated and archaic, with large sections viewed as not appropriate to be displayed in a Museum that exhibited objects which tended to the amusement and instruction of the public. Consequently, it will be suggested that by 1809, the sections of the collection that had not already been destroyed would have been sold to the Royal College of Surgeons for use in their anatomy lectures and teaching. The repository items that still form part of both the Royal College of Surgeon's and British Museum's collections will then be examined and will be complemented by an analysis of why it is so problematic to identify objects with Royal Society associations using a case study of four botany specimens. The chapter will conclude by briefly examining the other routes by which objects may have escaped the repository with particular reference to the appearance of a horn of an unknown animal, supposedly listed in Grew's catalogue of the Society's collection, at Jamrachs auction house in East London in the late nineteenth century.

Scope of the collection transferred to the British Museum

As the first chapter identified, the omission of the repository from architect Sir William Chambers's plans for the Society's new rooms at Somerset House

necessitated that a new home be found for its collection. By 1779, the Council of the Royal Society judged that the repository ought to be removed to the British Museum and was finally transferred to the national collection in 1781.[441] Daniel Solander appears to have been responsible for overseeing the transfer and organising the objects upon their arrival at the British Museum. A letter sent from the Museum in June 1781, and read at a Society meeting following their Summer recess in November of that year, thanked them for their donation of a 'very ample collection of Natural productions'.[442] Although the state of the items given to the Museum is not alluded to in the letter, perhaps a strategic move if they were in a bad condition, the Museum do appear to have been impressed with the size of the donation. The exact number of items transferred to the British Museum, however, is difficult to discern since there is no evidence that an inventory of the collection was made either immediately prior to its departure from the Society, or once the collection was in the British Museum. The last inventories of the repository, made by the committee set up to revive its ailing state in the 1760s, date from November 1763 and November 1765.[443] Unfortunately, the descriptions of specimens contained within the lists are fairly rudimentary. For example, in the section relating to 'serpents', whilst the fact that a 'serpent' is in the repository is noted, speculation upon what type of 'serpent' it might be, or details of any distinguishing features of specific 'serpent' specimens are lacking.[444] Furthermore, whilst a small amount of cross referencing to Grew's catalogue is evident, together with a few objects for which the date of acquisition and name of donor are recorded, generally detailed provenance information is similarly wanting. As a result, any attempt at comparing descriptions of specimens in the inventories to those given in the British Museum's mid- to late-nineteenth-century printed catalogues, with the exception of those cross referenced to Grew, is problematic.

The inventories are more useful in providing a record of the size of the collection in the mid 1760s. Thirty years had elapsed since the last inventory had been made and whilst a number of specimens had perished in the intervening years, an analysis of the lists, together with information contained in the Society's 'Journal

[441] RS, Original Council Minute Book, vol. 7, 19 June 1779, p. 27.
[442] 'Letter from Joseph Planta to Matthew Maty' RS, Original Journal Book, vol. 30, read at a meeting on 15 November 1781, p. 607.
[443] See RS, MS 415/1 and MS 417.
[444] RS, MS 415/1, fol. 9[r].

Book', suggests that the collection had more than doubled in size, increasing by almost 2500 objects. This was thanks in large part to the Chelsea Physic Garden's annual donation of fifty specimens per year, which accounted for almost 1500 of the total increase. Adding items donated to the repository after 1763 to this figure in order to estimate the total number of objects received by the British Museum is, however, a little less straightforward. Still, it is important to gain some idea of this figure since, as the second chapter argued, the 1770s witnessed the Society's most proactive, focussed, and successful spell of collecting objects, in particular, via its agreement with the Hudson's Bay Company, which secured an annual donation of specimens.

Information exists in both manuscript and printed form regarding objects given post 1763. Gifts given to the Society's library and repository between 1744 and 1779 were recorded in their manuscript 'Donations Book.[445] Whilst donations of multiple objects were sometimes listed separately, large benefactions, like those made by the Hudson's Bay Company, tended to be bulk documented noting that a donation had been made of mammals and birds for example, but generally without providing more specific information regarding the number of items sent or the particular genus and species each specimen exemplified. This was also particularly true of specimens of salts, earths and insects, which tended to be preceded by 'specimens of' without a numerical value. Further sources of information which detail specimens given include *Philosophical Transactions*, manuscript catalogues given by donors to accompany their specimens and the Royal Society's 'Journal Book'. For instance, some, if not all of the mammal and bird specimens included in the Hudson's Bay Company's first donation, in December 1771, were recorded in two articles written by John Rheinhold Forster and published in *Philosophical Transactions* in 1772.[446] A large part of the second batch of specimens given by the Hudson's Bay Company a year later, particularly the mammals and birds, were noted in manuscript catalogues written by Hudson's Bay naturalists Thomas Hutchins and Humphrey Martens.[447] Unlike the

[445] RS, 'Donations to the Library and Museum 1744-1779', MS 419.
[446] See John Reinhold Forster, 'Account of Several Quadrapeds from Hudson's Bay', *Philosophical Transactions*, 62 (1772), 370-381 and his 'An Account of the Birds Sent from Hudson's Bay; With Observations Relative to their Natural History; And Latin Descriptions of Some of the Most Uncommon, *Philosophical Transactions*, 62 (1772), 382-433.
[447] Humphrey Marten, 'A description of certain specimens of birds inhabiting the Hudson's Bay Company's Territories', RS, MS 127 and MS 128 and Thomas Hutchins 'Some notes on the fauna of the Hudson's Bay Company's Territories' RS, MS 129.

earlier donation, details of the mammal and bird specimens were not published, though Forster did publish an account of some of the fish from the donation.[448] Records of subsequent specimens given by the Hudson's Bay Company do not appear in printed form and if manuscript catalogues did accompany the Company's gifts, these are no longer extant.

Notwithstanding the inconsistencies in documentation at the Royal Society and the partial information that the surviving records provide, a conservative estimate might still be made of the number of objects transferred to the British Museum from the Royal Society (see figure 3). Between 1766 and 1781, the repository is likely to have increased in size by at least 20% and the British Museum would probably have received in excess of 6000 objects. Obviously these calculations, do not allow for items which went missing or were disposed of via exchange or due to natural decay. Certainly there is evidence that both of the latter occurred; duplicate specimens from Hudson's Bay and the Falkland Islands were given to the British Museum in January and December 1772,[449] whilst, as described in the second chapter, items may also have been passed to the King of Spain in 1775. There were also various moves to dispose of objects in the 1770s due to their condition. For example, Forster noted the poor condition of some of the specimens in his descriptions of the first batch of Hudson's Bay mammals.[450] In addition, an inspection of the repository in August 1778 by Fellows including Daniel Solander and Joseph Planta found that moths and decay had affected various bird and mammal specimens, which necessitated that they be destroyed so as not to affect the remainder of the collection.[451]

[448] John Reinhold Forster, 'An Account of Some Curious Fishes, Sent from Hudson's Bay', *Philosophical Transactions*, 63 (1773-74), 149-160.
[449] BM, Book of Presents, 24 January 1772 and 4 December 1772, no pagination.
[450] See for example Forster, 'Account of Several Quadrapeds', p. 379, specimens 15 and 16.
[451] RS, Original Council Minute Book, vol. 7, 5 November 1778, p. 2.

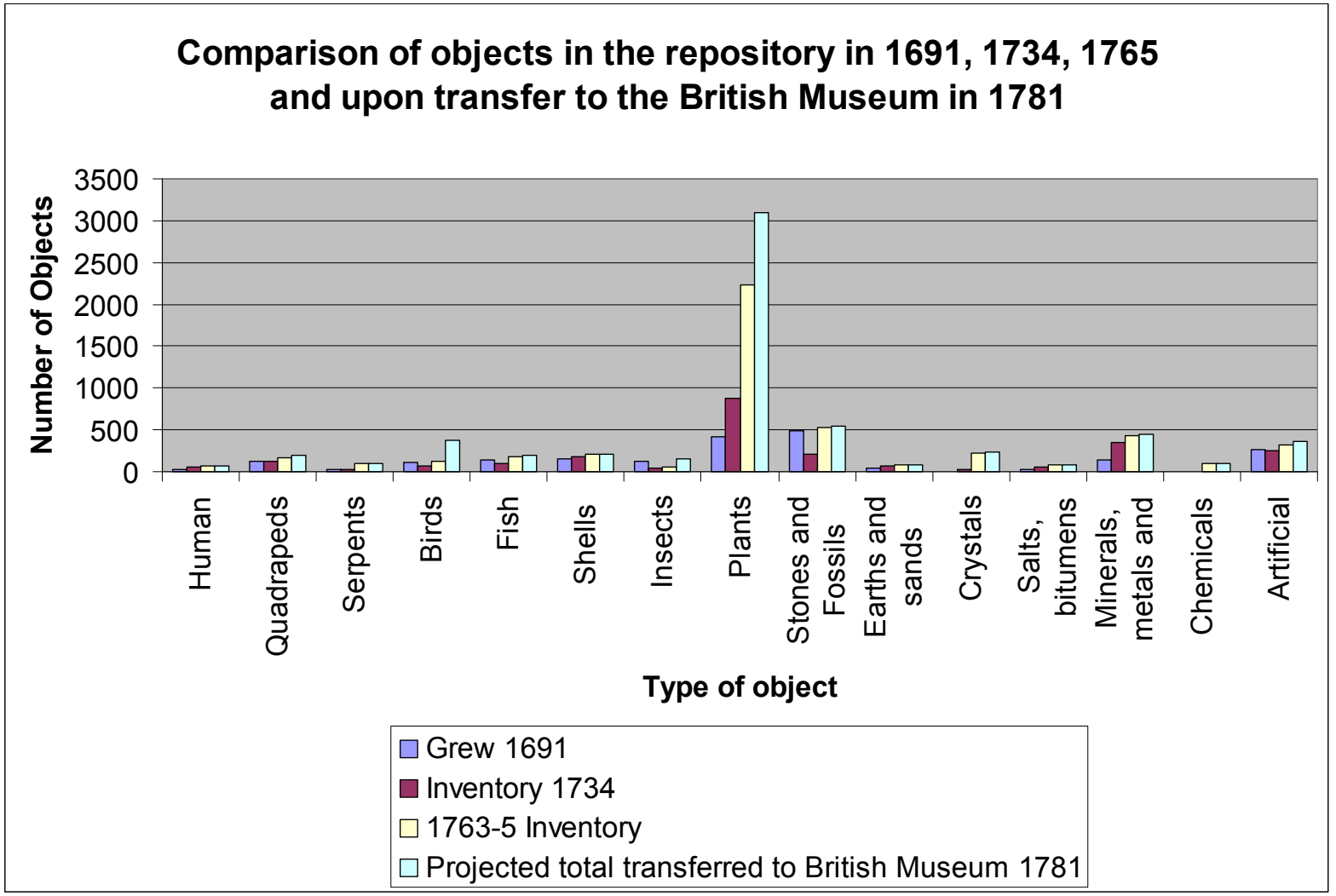

Figure 3: Comparison of the objects in the repository in 1691, 1734, 1765 and upon transfer to the British Museum in 1781

Despite this, seemingly a significant collection, particularly strong in bird and mammal skins from the Americas and in plant specimens cultivated in Britain, was transferred to the British Museum. In addition to these dried items, the repository is also likely to have transferred a spirit collection of at least eighty specimens including marine, avian, reptile, botanical and human preparations. The Museum would also have acquired a large collection of human and non-human calculi including six cases alone of mammal calculi plus a number of bones, perhaps most notably 'two large vertebrae and patella of a whale' that the Royal Society kept in the yard outside the repository.[452] Finally, it is likely that the Society also sent quite a large insect collection to the British Museum because the Donations Book notes a number of gifts of insects in the 1770s, but unfortunately, an accurate estimate of the number of insects given is not possible because the quantities of these specimens were so rarely recorded.

All of the repository's natural history objects, including human material, appear to have been forwarded to the British Museum, with the exception, anomalously, of twenty plant specimens sent by Richard Hill Waring.[453] In January 1771, Waring sent a letter regarding observations on some plants in north-west England and north Wales, which was published in *Philosophical Transactions* later that year.[454] He followed this up with a further letter in 1776 of 'Some not common English Plants' to which he attached samples of some of the specimens he described.[455] It does not appear from the 'Journal Book' that Waring's letter was read before the Society and, unlike his first letter, it was not published. Most interestingly however, seemingly rather than putting the botanical samples in the repository, they were retained as part of the Society's manuscript collection and, perhaps surprisingly, have survived and remain in the Society's archives to this day. That Waring's plants were not put in the repository could have been for a variety of reasons, possibly as they were not deemed sufficiently interesting, perhaps due to an oversight, or maybe

[452] RS, MS 415/1, fol. 71[r].
[453] Little is known about Waring, though brief biographical details appear in James Britten and G. S. Boulger, *A Biographical Index and British and Irish Botanists* (London: West Newman & Co., 1893), p. 176 and Ray Desmond, *Dictionary of British and Irish Horticulturalists Including Plant Collectors, Flower Rarities and Garden Designers* (London: Taylor & Francis and the Natural History Museum, 1994), p. 718.
[454] Richard Hill Waring, 'A Letter from Richard Waring to the Hon. Daines Barrington on some Plants Found in Several Parts of England', *Philosophical Transactions*, 61 (1771), 359-89.
[455] 'Book of Pressed Botanical Specimens Presented by R. H. Waring', RS, MS 760.

because the letter was received around the time that Sir William Chambers's plans for the Society's move to Somerset House were presented to the Society. The 'Journal' and 'Donations Book' do however suggest that donations made later than May 1776 were sent to the repository, so why the Waring specimens were retained remains somewhat of a mystery. Perhaps however there was a move to keep accounts and the small samples sent to support the observations contained within them together as a letter sent in September 1779 from Jean Antoine Andre on methods of dying silk included a sample of silk which was again kept in the archives rather than being put in the repository.[456]

The Society intentionally retained a number of artificial objects. In April 1781, Sir Charles Blagden, Nevil Maskelyne and Henry Watson were asked to 'inspect the instruments, Models and Artificial Curiosities' in the repository and identify which should be kept and which should go to the British Museum.[457] Most, if not all, of those selected were scientific instruments such as Francis Hauksbee's air pump, and of these, a great number appear to have been astronomical items, including Newton's telescope and instruments used to observe the transit of Venus in Hudson's Bay in 1769. The objects which have survived to the present day are still owned by the Royal Society, though a number of the objects are currently on loan to the Science Museum, London.

The fate of the collection upon transfer to the British Museum

By June 1781, the repository in its entirety had been removed from the Royal Society and deposited in what Joseph Solander described as 'the base story' of Montagu House.[458] The basement section of the house provided the Museum with a storage area to keep items that were not on exhibition, including damaged and duplicate specimens. The Museum appears to have been relatively enthusiastic about the receipt of the collection. Certainly records from their archives demonstrate that the Museum were keen to take measures to both conserve and preserve the objects following their accession. In his 'Officer's Report' from October 1781, for instance, Daniel Solander proposed that various sizes of glass containers be purchased to put

[456] 'Letter from Jean Antoine Andre to the Royal Society' in RS, Archived Papers, vol. 4, 5 September 1779, p. 4.
[457] RS, Original Council Minute Book, 5 April 1781, p. 74.
[458] BM, Minutes of the Standing Committee of Trustees, CE 3, 15 June 1781, p. 1766.

some of the former repository's animals in, whilst a month later, in November 1781, his report to the Museum's Standing Committee described how further cases had been ordered and that both a carpenter had been employed to mend the Society's existing cases, in addition to a person to 'properly set up' the animals and birds.[459] Notwithstanding this initial enthusiasm, it is difficult to see how far the Museum progressed with conserving and arranging the repository given that in May 1782, less than a year after the transfer, Daniel Solander died of a stroke aged only 49. Solander's untimely death is perhaps one of the reasons why very few of the repository's former objects can be identified today as having Royal Society connections, since it is unlikely that he would have been able to complete the task of organising the collection that he started only a few months earlier.

Still, even if Solander had succeeded in arranging the collections, the Society's former specimens would have had to contend with further obstacles in order to survive. The British Museum viewed itself as a place to exhibit items 'for the purpose of administering instruction in the form of amusement & thus endeavouring to awake latent curiosity'.[460] Items which did not contribute to the Museum's aspirations seem to have fallen into two categories being 'deemd either unworthy of a place in the apartments above, or improper to be exhibited to the Companies that attended'.[461] The notion that objects were 'unworthy' of a place in the Museum's exhibition halls seems to refer to the condition of the specimens. In a time before the primacy of the type specimen, the Museum would put the best likeness of a species it had in its collection on display and would either destroy duplicate specimens, particularly those in a very bad condition, or store them in the basement section, noted above. Of the duplicate and damaged specimens in storage, deterioration due to age and infestations was rife, particularly amongst the Museum's dried bird and mammal skins as well as in their insect collections.[462] However it was not only duplicates that were viewed to be redundant as display specimens; comments made by early-nineteenth-century British Museum keeper, George Shaw, seem to hint that specimens of inferior quality in

[459] See 'Official British Museum Diaries', BL, ADD 45875, 5 October 1781, fol. 28^{r} and BM, Standing Committee of Trustees, 30 November 1781, p. 1781
[460] BM, Original Papers, fol. 907^{r}.
[461] BM, Original Papers, fol. 905^{r}.
[462] See A. E. Gunther, *The Founders of Science at the British Museum 1753-1900* (Suffolk: Halesworth Press, 1980), p. 35.

general, regardless of whether they were duplicates had no place in the Museum, though whether this was practised is questionable.[463]

Items viewed as 'improper' to appear in the Museum's public exhibition space included their spirit collection and anatomical preparations. At the beginning of the nineteenth century, the Museum's assortment of human and animal deformities preserved in spirits was removed from exhibition 'lest the fancies of pregnant females might attribute to them the blemishes & misconformations of their future offspring'.[464] Although the Museum's more general spirit collections remained on display, they were seen to awake 'disgust' rather than 'curiosity', led the room to 'smell strongly of spirits' and, on the subject of the specimens in bottles themselves, in particular the snakes and fishes, to be 'very frequently designated by the opprobrious appellation of hobgoblins' by the visitors.[465] The Museum's osteological collection was viewed as similarly inappropriate, though its utility both in comparative anatomy and in the interesting bone diseases the specimens exemplified was acknowledged.[466] In addition, the Museum argued of their collection of human and non-human calculi that 'no amusement can be derived & little instruction unless they are submitted to chemical analysis', whilst their anatomical preparations, which they argued may have been useful to teachers of anatomy were 'in no other point of view advantageous to the public'.[467]

Leaving aside for a moment the Society's botanical specimens, the various descriptions of apparently redundant items sounds much like the specimens evident amongst the former repository's objects, which included a number of old skins, likely to have been duplicates of those already in the Museum's collection, specimens in spirits, anatomical preparations, osteological items and human and non-human calculi. In fact, Shaw makes the connection between superfluous items and the Society's repository in his discussion of anatomical preparations deemed inappropriate for

[463] In a discussion of duplicate specimens to be sold to the Royal College of Surgeons Shaw commented that he had selected 'a few specimens' for the sale 'which tho' not duplicates, were yet very unfit, (from their mutilated state,) for the purpose of exhibition in the British Museum' BM, Officers Reports, May 1809, fol. 200^{v}.
[464] BM, Original Papers, fol. 906^{r}.
[465] BM, Original Papers, fol. 906^{v}.
[466] BM, Original Papers, fol. 906^{r}.
[467] BM, Original Papers, fol. 906^{r}.

display when he scathingly commented that they were 'of no imaginable consequence in the Museum, & have probably been formerly preserved in that of the Royal Society rather out of regard to the memory of Swammerdam than from any real value'.[468] In addition, given that damaged and deteriorating items were also stored in the basement, if the repository specimens were not removed to the exhibition halls above, then it is likely that even if they were not damaged to begin with, then their condition would have worsened as a result of their proximity to specimens that were in a bad condition.

The ideas of 'unworthy' and 'improper' specimens seems to suggest that the Museum were very conscious not only of their status of displaying the national collection and the notions of prestige that inevitably accompany a collection of that kind, but were also acutely aware of the public for whom objects were displayed. The Museum viewed itself as displaying items for the purposes of entertainment and instruction. It was therefore important that their collection conformed to this remit. However, there was a further aspect that the Museum considered in relation to their public, specifically that not only did it include a non-scientific audience but also and, perhaps crucially, a female audience. The vast literature which explores eighteenth-century sensibility makes much of the fact that women were viewed as being particularly predisposed to hysteria and hypochondria by virtue of their gender, and there is a sense that this was particularly true whilst pregnant.[469] The specific idea that a pregnant woman might believe that seeing a human deformity might harm her unborn child seems to stem from a much earlier notion. Patricia Crawford describes that in seventeenth-century England a woman's 'imagination was believed to shape the child's features' and cites the example of a child being born with 'ruffs' as being

[468] BM, Officers Reports, July 1808, fol 131[r].
[469] On puerperal insanity see Hilary Maitland, 'Languages and Landscapes of Emotion: Motherhood and puerperal insanity in the nineteenth century', *Medicine, Emotion and Disease, 1700-1950*, ed. by Fay Bound Alberti (Basingstoke: Palgrave Macmillan, 2006), pp. 53-78 (particularly pp. 54-5) and Anne Digby, 'Women's Biological Straightjacket', in *Sexuality and Subordination*, ed. by Susan Mendus and Jane Rendall (London and New York: Routledge, 1989), pp. 192-200. For discussions on late eighteenth- and early nineteenth-century sensibility more generally see G. J. Barker-Benfield, *The Culture of Sensibility: Sex and society in eighteenth-century Britain* (Chicago and London: University of Chicago Press, 1992), particularly pp. 25-6, John Mullan, *Sentiment and Sociability: The language of feeling in the eighteenth century* (Oxford: Clarendon Press, 1988), Ann Jessie van Sant, *Eighteenth-Century Sensibility and the Novel: The senses in social context* (Cambridge: Cambridge University Press: 1993).

attributed to the fashion worn by the child's mother during pregnancy'.[470] Seemingly, two hundred years later this view was still evident in cultural consciousness.[471]

As a result, the Museum saw themselves as needing to be sensitive to the sensibilities of this audience and consider the emotional effect that showing human and animal deformities might have. With its expanding audiences, the British Museum was faced with a more general public and highlights a clashing of cultures between popular and scientific modes of thinking. However rather than attempting to re-educate the public that the specimens they saw had no bearing upon the health of their unborn offspring and that the spirit preparations of marine and reptile specimens were not 'hobgoblins', the Museum elected to remove the difficult narratives altogether. Furthermore, it was not just the sight of the specimen that the Museum considered in relation to their audience, but also their smell and so the strong scent of spirits in the room which contained the wet preparations was also seen as in some way inappropriate. The Museum was acutely aware of the audiences that would be viewing the specimens on display, in addition to how the items might appeal to the senses and emotions of their various publics.

Disposal of supposedly improper and inappropriate items

Before 1809, duplicate and damaged items would be treated in one of two ways; first items were destroyed as part of George Shaw's infamous 'cremations'. An article in the *Edinburgh Review*, for instance, recollects

> a large fire being kindled in the courts of Montague House, into which the rotten or mutilated fragments of various zoological specimens were thrown, and a guard placed over this funeral pile, to prevent any sacrilegious hand from snatching a feather or a bone from destruction.[472]

Second, items would be removed from public display into storage in the 'basement story' of Montagu House, as discussed above.[473] The basement also potentially

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[470] Patricia Crawford, 'The Construction and Experience of Maternity in Seventeenth-Century England' in *Women as Mothers in Pre-Industrial England: Essays in memory of Dorothy McLaren* (London and New York: Routledge, 1990), pp. 3-38 (p. 7).

[471] This view was evident even later in the nineteenth century as Joseph Merrick, popularly known as 'the elephant man' attributed his condition to his mother being scared by an elephant whilst pregnant.

[472] T. S. Traill, 'Description of the Marbles, etc. deposited in the British Museum, 1821, *Edinburgh Review*, 38, 379-398 (p. 390).

contained a number of the repository's former specimens together with items from the Museum's collection that were viewed as inappropriate for display. The objects placed in storage posed somewhat of a conundrum for the Museum. First, they were viewed as not tending towards the entertainment, and crucially instruction, of the public and secondly, they took up space which William Clift, the first conservator of the Royal College of Surgeon's collection, suggested that the British Museum were keen to use to store their book collections.[474] In addition, despite Shaw's eagerness to 'cremate' specimens in a bad condition, the Museum were reluctant for all to be treated in this manner and preferred that they be used for the public good at an alternative institution. As early as July 1784, the question was put to Edward Whitaker Gray, who later became keeper of the collection, whether items in the basement might be sold, but he advised that there were 'few or no purchasers of Natural History at this time'.[475] By 1809, the Royal College of Surgeons provided such a purchaser. The museum, which did not open until 1813, was founded on John Hunter's anatomical and physiological collections, which were purchased by the government in 1799 and given to what is now known as the Royal College of Surgeons on the condition that a series of lectures be instituted for the benefit of the public. Its status both as an institution founded upon a government-bought collection and its utility to a wide audience via its public lectures were used to justify the British Museum's offer to sell the Royal College of Surgeons their redundant holdings. In 1809 the sale was agreed to for £175:10:0 and the objects were transferred to the Royal College of Surgeon's Collection also known as the Hunterian collection.[476] In his notes on the purchased collection, Clift describes that it was comprised of

> a large accumulation of old, Duplicate, and long neglected, and refuse specimens of Natural History, together with all the old broken, mutilated, spoiling and spoiled anatomical preparations, skeletons &

[473] Both William Clift comment on Shaw's practice of burning decaying and old specimens in William Clift, 'Memoranda concerning the old and duplicate specimens of Natural History and Anatomical Articles by the Trustees of the British Museum to the Royal College of Surgeons in London in the year 1809', London, Royal College of Surgeons (RCS), MS0007/1/2/2/11, fol. 1^{v} (see appendix 4.1), whilst Gunther, *Founders of Science*, p. 35, notes the practice of placing duplicate and damaged specimens in the Museum's cellar and basement.

[474] RCS, MS0007/1/2/2/11, fol. 3^{r}.

[475] BM, Standing Committee of Trustees, 2 July 1784, p. 1874 and 3 September 1784, p. 1880. Gunther, p. 35, notes a further move to sell the items in the basement was made in 1787, but it was not until 1809 that this plan came to fruition.

[476] It transpired that objects which the British Museum wanted to retain had accidentally been sold to the Royal College of Surgeons and so half this sum was returned by the Museum some years later upon receipt of the items.

bones, which had been from time to time rejected from the museum upstairs, or had never been in that state of preparation as to render them fit for public exhibition.[477]

Amongst these were a large amount of specimens in bottles 'from the time of Dr Hooke' onwards including, human foetuses, monstrous kittens and puppies, English snakes 'by the score' and 'many birds reptiles & quadrapeds.[478] Of the birds, some were 'in a dried state but not stuffed'.[479] Note was also made that 'time, damp and dirt' had rendered many of the labels of both the wet and dry specimens illegible and numerous were not labelled at all.[480]

That items were not labelled or that the labels had deteriorated sufficiently that they could no longer be read meant that even directly after the transfer from the British Museum, few former Royal Society objects could be identified by the Royal College of Surgeons. In his notes on the purchase, Clift does mention a small number of the former repository's holdings including John Evelyn's tables, which were comprised of a series of four anatomical tables of dried tissue mounted onto wooden boards made by Giovanni Leoni d'Este in 1646, a wreathed elephant tusk, *Loxodonta africana*, given to the Society by Thomas Crispe of the Royal Africa Company in March 1677,[481] and the skull and part of the skeleton of a crocodile from the East Indies given by Sir Robert Southwell.[482] Whilst compiling catalogues of the Royal College of Surgeon's collection in the early 1830s, a later curator, Richard Owen, used Grew's catalogue to identify further items from the Royal Society. In addition to those already mentioned above, he recognised the skull of a large scarus, or parrotfish, and the head and skin of the bony-scaled pike as being from the repository.[483] Owen does not appear to be using any Royal Society sources beyond Grew's catalogue since the maxillary bone of a sheep containing three molars and labelled "presented by Dr Needham, Oct 20th 1673," which he very tentatively attributes to Sloane's collection

[477] RCS, MS0007/1/2/2/11, fol. 3r.
[478] RCS, MS0007/1/2/2/11, fol. 7r.
[479] RCS, MS0007/1/2/2/11, fol. 9r.
[480] RCS, MS0007/1/2/2/11, fol. 7r.
[481] RS, Original Journal Book, vol. 5, 8 March 1677, p. 181.
[482] RCS, MS0007/1/2/2/11, fol. 7r.
[483] See Royal College of Surgeons, *Catalogue of the contents of the Museum of the Royal College of Surgeons in London. Part 3, comprehending the human and comparative osteology* (London: Francis Warr, 1831), pp. 240 and 243 respectively. The wreathed elephant tusk is noted on p. 98 whilst the crocodile skull and skeleton are detailed on p. 226

was actually from the Royal Society.[484] It was given to Walter Needham by a Mr Templer from Nottingham and donated to the Royal Society in October 1673. Curiously, Needham's gift was omitted from Grew's catalogue of the collection, which meant that Owen was unable to note its Royal Society associations.[485] By not having access to, or perhaps not knowing about, the records of specimens contained in the Society's 'Journal Book', Owen was unable to identify further repository items and one wonders how many more items would have been flagged as having a connection to the repository if Owen had only had sight of the Society's archives.

It seems that if the repository's objects survived the preservation issues which plagued the British Museum's collection in the late eighteenth and early nineteenth centuries, then a not insubstantial proportion of the remaining items may have been sold to the Royal College of Surgeons because they were seen as superfluous to the Museum's display collection. Whilst the lack of documentary evidence at the Royal College of Surgeons means that it is very difficult to conclusively identify objects in their collection as having been part of the former repository, it is questionable whether much would have survived once in the collection anyway, particularly given the way in which the Royal College of Surgeons planned to use the specimens they had purchased. It was thought that some of the items

> might be useful as store specimens for dissection, & reference for the purposes of illustrating the Lectures stipulated by the Government to be delivered at the College; and prevent as much as possible the necessity of examining & thereby injuring or altering the Hunterian preparations, which were in good preservation.[486]

The utility of the collection purchased from the British Museum lay in its use as part of a teaching collection, which could be handled and dissected and which crucially, unlike Hunter's collection, was expendable. Consequently it is likely that few of the items purchased in general survive today. Of the Royal Society's collection, only the Evelyn tables and Crispe's wreathed tusk can be positively identified as definitely

[484] Royal College of Surgeons, p. 151.
[485] RS, Original Journal Book, vol. 5, 30 October 1673, p. 39.
[486] RCS, MS0007/1/2/2/11, fol. 3^{r}.

belonging to the repository.[487] Further items which were part of the Royal College's purchase from the British Museum have been tentatively attributed as being either from Sloane's collection or from the Royal Society including a further curved African tusk, a chick with fused inner legs in spirits, female foetal twins showing facio-thoracic union, a skeleton of a boy aged between two and three and the skull of a full term foetus.[488]

Some items were not sold to the Royal College of Surgeons. Shaw commented soon after the removal of the purchased items to the Royal College had been completed that some cabinets of 'entirely worthless' insects and shells 'of but little value' remained in the basement; presumably items which even the Royal College of Surgeons could not find a use for.[489] Whether the shells and insects were disposed of immediately is difficult to say as is whether they were part of the repository's collection, but it does indicate again that particularly fragile or perishable items were proving to be difficult to preserve. Interestingly, because of the Museum's burgeoning collection of insects, which proved too great for their existing cabinet, in December 1785, the cabinet which contained the repository's insect specimens was 'appropriated', though whether it was already empty or the collection it contained was disposed of is not mentioned.[490] It is likely however in this instance that the repository's furniture proved more valuable than the items contained within it. In addition, in May 1803, the Trustees ordered that duplicates in the Museum's mineral collection be sold.[491] Like the insect and shell collections, there is no evidence to suggest that the Royal Society's items were amongst these duplicates, but it is certainly a possibility. The majority of the repository's former items that were not sold to the Royal College of Surgeons appear to have been botanical material and of the specimens that can be conclusively identified, all but four are plant specimens.

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[487] The object codes are RCSHM/Z 32-35 and RCSOM/G 122.8 and can be viewed online at Royal College of Surgeons: http://surgicat.rcseng.ac.uk/ accessed 19 February 2009.
[488] This information was accessed from the Hunterian Museum's online catalogue [see note 487] and the object codes for the specimens are RCSOM/G 122.81, RCSPC/T 14C.1, RCSPC/T 5D.1, RCSHM/Osteo. 50 and RCSHM/Osteo. 37 respectively.
[489] BM, Officers Report, November 1809, fol 231^{r}.
[490] BM, Standing Committee of Trustees, 9 December 1785, p. 1917.
[491] BM, Standing Committee of Trustees, 8 May 1803, p. 2222.

Surviving specimens

Of the non-botanical material, three fossils remain, two of which are noted in W. N. Edwards, *The Early History of Palaeontology* and the third in Desmond King-Hele's biography of Erasmus Darwin.[492] The first is the right molar of a mastodon, or *Tetrabelodon angustidens*, discussed in the third chapter (see figure 4). Whilst its inclusion in Grew's catalogue means that it predates 1681, there is no record of its donation in the Society's 'Journal Book'. It is thus likely to have come from Hubert's cabinet, upon which the repository was founded. Unfortunately, there is no mention of the specimen in the catalogues of Hubert's collection either, though this is perhaps to be expected since all but a few key items were bulk catalogued. In addition, Grew does not mention the tooth as having associations with Hubert, but, as the first chapter identified, given Hubert's seeming effacement from the memory of the collection, this is similarly unsurprising. It is labelled 'Figd in Grew's Catalogue of Rarities in Gresham College 1681 p. 256. tab. 19 Presd by the council of the Royal Society'. It was misidentified in Grew's catalogue as being the 'petrifyd tooth of a Sea Animal',[493] though Hooke's 'Discourse on Earthquakes' recognised that it could be 'the petrified Grinder of some large Animal, possibly of a Whale or Elephant'.[494] Both the Society's manuscript inventories from 1734 and 1763 record under their fossil collections: 'a very great double tooth or grinder', without noting the animal from which it was derived,[495] and it does not appear to have been identified as the molar of a mastodon until after its incorporation into the British Museum's collection. It is currently on loan to the British Museum's Enlightenment Gallery from the Natural History Museum.

[492] See Edwards, *Early History of Palaeontology*, pp. 50-1 and Desmond King-Hele, *Erasmus Darwin: A life of unparalleled achievement* (London: de la Mare, 1999), pp. 2-3 respectively.
[493] Grew, p. 256 and fig. 19.
[494] Hooke, 'Discourse on Earthquakes' in *Posthumous Works*, ed. by Richard Waller, p. 285 and tab 5.
[495] See RS, MS 413, p. 110 and MS 414.

Figure 4: Tooth of a Mastodon.
Photograph taken by Janet Larkin, Manager of the Enlightenment Gallery with the kind permission of Andy Currant curator of the Quaternary mammal collection at the Natural History Museum

The second is a fossil fragment of the left fronto-nasal region of the cranium plus three molars of the woolly rhinoceros, or *Coelodonta antiquitatis*, donated to the Society by the Archbishop of Canterbury who acquired them from his employee William Somner (see figures 5 and 6). William's brother John, who died of the plague shortly after, found the jawbone and teeth whilst digging a well in Chartham in 1668. Initially, the Somners believed the specimens to have been part of a sea monster, but by the time they were donated to the Royal Society, they had been re-identified as hippopotamus bones.[496] William Somner's account of the find was published in a pamphlet headed the *Chartham News*, which was reprinted in *Philosophical Transactions* in 1701 and they also featured in Grew's catalogue of the Society's collection.[497] The Society's 1734 manuscript inventory records them, perhaps slightly hesitantly, as

[496] The donation is recorded in RS, Original Journal Book, vol. 4, 12 January 1671, p. 164.
[497] See Somner, pp. 882-893 and Grew, pp. 254-5.

Part of the upper jaw of a strange head, with some fragments of other bones & three very great double teeth or Grinders from Chartham, described by William Somner in his Chartham news, & supposed by him to belong to the hippopotamus.[498]

The 1763 inventory is more cautious still, replicating the first part of the description, but omitting the speculative addition that the fossils might come from a hippopotamus.[499] Following the transfer of the head and teeth to the British Museum, nineteenth-century-curator, Richard Owen, who had studied under Georges Cuvier in Paris, realised that the remains belonged to a woolly rhinoceros.[500] This is particularly interesting as Grew's description of the specimens in his catalogue of the repository also realised that they had more in common with a rhinoceros than a hippopotamus; a perspective which appears to have been largely ignored until Owen's later identification.[501]

Figure 5: Three teeth of the woolly rhinoceros found in Chartham, Kent
Photograph taken by Jenni Thomas with the kind permission of Andy Currant, curator of the Quaternary mammal collection, Natural History Museum

[498] RS, MS 414.
[499] RS, MS 413, p. 110.
[500] My thanks to Andy Currant, curator of the Quaternary mammal collection, at the Natural History Museum at South Kensington for information regarding this point. For catalogues containing the amended specimen indentification see Richard Owen, *British Fossil Mammals and Birds* (London: Van Voorst, 1846), pp. 325-331; fig. 121 and Richard Lydekker, *Catalogue of the Fossil Mammalia in the British Museum (Natural History)*, vol. 3, ed. by H. Woodward (London: British Museum, 1886), pp. 93-4, fig. 12.
[501] Grew, pp. 254-5.

Unlike the mastodon molar, the woolly rhinoceros specimens are not labelled, though the surface of the jawbone is inscribed with 'Chartham Kent' (see figure 6). When this inscription occurred is difficult to say, but it is unlikely that it was made either in the later years of the specimens' stay in the British Museum or after their transfer to South Kensington, in 1881, as engraving objects for the purpose of identification does not appear to have been practiced.[502] It may however have occurred in the specimens' very early years at the British Museum. A jawbone of a mastodon donated by the Earl of Shelburne to the British Museum in 1768 is similarly inscribed, though rather than the place it was found being etched onto the object, it is inscribed 'Philosoph. Transact. For 1768. pl. 4 fig. 1' which refers to the illustration of it which accompanied William Hunter's article regarding its identification in *Philosophical Transactions*.[503] Since this could not have occurred until after the publication of Hunter's article, it must have happened once it was in the British Museum. Consequently the woolly mammoth jawbone may have also been engraved once at the Museum, but then one wonders why it was inscribed with its location rather than citing its corresponding article in *Philosophical Transactions*, as in the case of the Shelburne jawbone. Regardless of when it was engraved, whilst the teeth which accompany, but are detached from the jawbone, are very distinctive and so could easily be identified using illustrations of them, without the information written directly onto the jawbone alluding to the paper trail by which it could be identified, it may have been lost. Similarly, although the repository's tooth of the mastodon is quite individual and could be recognised using images, once again the label attached to the specimen makes it easily identifiable.

[502] My thanks to Andy Currant for his counsel regarding this point.
[503] William Hunter, 'Observations on the Bones, Commonly Supposed to Be Elephants Bones', 34-45.

Figure 6: Jawbone of the woolly rhinoceros found in Chartham, Kent
Photograph taken by Jenni Thomas with the kind permission of Andy Currant, curator of the Quaternary mammal collection, Natural History Museum

The third of the surviving non-botanical specimens is a substantial part of a specimen of *Plesiosaurus dolichodeirus* which is estimated as being between 194 and 208 million years old remains extant. It was found by Robert Darwin in the Lias of Elston, Newark, was donated to the Society in 1718 and was described by William Stukely in *Philosophical Transactions* in 1719.[504] Desmond King-Hele describes that it was 'the first known fossilized skeleton of a Jurassic reptile' to have been 'brought to the attention of the scientific world'.[505] The specimen, which is some three feet long and two feet wide and includes sixteen vertebrae and nine ribs is currently on display at the Natural History Museum. Further fossils from the repository have yet to become apparent, though Hugh Torrens notes that Richard Lydekker's *Catalogue of the Fossil Reptilia and Amphibia in the British Museum (Natural History)* which recorded the plesiosaur, noted above, also catalogued the Royal Society's 'Whitby crocodile', or *Steneosaurus chapmani* as being part of the natural history branch of the British Museum's collection.[506] The specimen was found in 1758 at Whitby Lias

[504] See King-Hele, p. 2 and William Stukely, 'An Account of the Impression of the Almost Entire Sceleton of a Large Animal in a Very Hard Stone, Lately Presented the Royal Society, from Nottinghamshire', *Philosophical Transactions*, vol. 30 (1717 - 1719), 963-968.
[505] King-Hele, pp. 2-3.
[506] See Torrens, p. 84 and p. 86, n. 60 and Richard Lydekker, *Catalogue of the Fossil Reptilia and Amphibia in the British Museum (Natural History)*, (London: British Museum, 1888-9), pt. 1, p. 111 and pt. 2, p. 259.

and was described in *Philosophical Transactions* of that year by William Chapman.[507] The record in Lydekker means that the fossil was in the British Museum (Natural History), now Natural History Museum, in 1888. However a recent search conducted by the curatorial team has failed to find it, which suggests it has either been lost or has become divorced from its label and so can no longer be identified with certainty.[508]

The final of the four surviving non-botanical items are the frontlet and horns of a specimen of *Bos nanus* (see figure 7). Like the mastodon tooth, its inclusion in Grew means that it predates 1681 and, since it is not noted as being donated in the 'Journal Book', it is likely to have been part of Hubert's collection. Again, however, Hubert's bulk documentation of all but a few of his horns prevents one from saying the specimen was from his cabinet with certainty. The horns were misidentified by Grew as being from the 'Common Buffalo', though he realised the horns were an important scientific specimen and so included an extensive description of them in his catalogue.[509] The horns were also described in both Thomas Pennant's *Synopsis of Quadrapeds* and his *History of Quadrapeds* under the name 'Cape Buffalo' in 1771 and 1781 respectively.[510] The horns are actually the type specimen of the species *Bos nanus* and are now held by the Ungulate Mammals section of the Natural History Museum and are amongst the Museum's oldest surviving specimens

[507] William Chapman, 'An Account of the Fossile Bones of an Allegator, Found on the Sea-Shore, Near Whitby in Yorkshire. In a Letter to John Fothergill, M. D. from Capt. William Chapman', *Philosophical Transactions*, vol. 50 (1757 - 1758), 688-691.
[508] My thanks to Sandra Chapman, Curator of Fossil Amphibians, Reptiles & Birds in the department of palaeontology at the Natural History Museum for her assistance in searching for these items.
[509] Grew, p. 26.
[510] See Thomas Pennant, *Synopsis of Quadrupeds*, p. 9 and plate IX, fig. iii and *History of Quadrupeds*, I, p. 28.

Figure 7: Frontlet and horns of the type of *Bos nanus* in the Natural History Museum
Photograph taken by Jenni Thomas with the kind permission of Richard Sabin, Curator, Mammal Group, Natural History Museum

Based on this chapter's analysis so far, it is doubtful whether many of the repository's items have survived given that most seem to have been damaged, destroyed, or sold and used in teaching. In addition, those that have persisted into the twenty-first century are not sufficiently well documented to permit conclusive identification of their having a Royal Society association. The exception to this is in botany. Ruth Stungo has carried out extensive research on the Chelsea Physic Garden's annual donation of fifty dried plant specimens in accordance with Sir Hans Sloane's deed of conveyance to the Apothecaries Company, which was discussed in the second chapter.[511] These donations began in 1722 and continued beyond 1781, when the repository was given to the British Museum, by being made directly to the Museum until 1796. The Chelsea Physic Garden would have donated 3750 specimens in total, 2900 during the life of the repository and Stungo claims to have found 'all but a small number' of them at the Natural History Museum.[512] Thanks to the survival of

[511] Stungo, pp. 213-224.
[512] Stungo, p. 213.

so many of the Chelsea Physic Garden donations, it means that a little under half of the repository's former specimens have survived into the twenty-first century. Also worthy of note is how important the specimens are within the history of botany. Stungo notes that 168 of the specimens given to the Society are quoted as the first record of cultivation of the species in Britain, of which seven of these were from the first fifty plants given to the Society and she anticipates that with further work more first records will become apparent.[513] In addition, Stungo believes a number of the samples sent to the Society may also be type specimens.[514] Once again this suggests that the Society had a far more substantial and important collection than has hitherto been characterised.

Stungo's success in finding so many of the former Chelsea Physic Garden donations lies in the fact that a clear paper trail exists between the Garden and the Royal Society, and later British Museum because each batch of specimens was accompanied by a catalogue detailing the contents of the donation. Similarly, it is surely not a coincidence that the items identified by Clift and Owen at the Royal College of Surgeons, plus the horn and two of the three fossils now at the Natural History Museum, were noted in detail in Grew's *Catalogue* and were figured in his or in other naturalists' work. In addition, all three fossils featured in *Philosophical Transactions* with both a written description and an image of the specimen at some point during its stay at the repository. It is likely that further items remain in the Natural History Museum, but any identification of these is tentative at best and is hampered not only by a lack of documentation, but also because distinct donors were likely to be collecting from the same sources. It is therefore not possible to infer that a donation was made to the Royal Society by virtue of it coming from a particular donor.

This is exemplified using two specimens in the Natural History Museum's herbarium one of *Coeloglossum viride*, *Orchidaceae*, or 'frog orchid' and the other *Rosa blanda*, *Rosaceae*, or 'Hudson Bay rose' which are both labelled 'Hudson Bay 1773'. The orchid specimen was generally assumed to have part of the Banks herbarium, but could have a Royal Society connection. In November 1773, the

[513] Stungo, p. 221 and p. 224, n. 30.
[514] Stungo, p. 220.

Hudson's Bay Company gave 'a very large Collection of Animals and Plants from Hudson's Bay' to the Royal Society which seems to tally with the labels on the specimens.[515] However, the orchid is annotated by what appears to be the hand of Sigismund Backstrom, initially a ship's surgeon who was employed by Banks between 1773 and 1775 to work in his herbarium.[516] This means it is a little more doubtful as to whether the specimen was formerly from the Royal Society as it is not particularly likely that one of Banks's secretaries would mount and annotate Royal Society specimens. Having said this, in January 1776, Banks returned two collections of plants that he had borrowed from the Society, which had been given to them by a Mr Martin from New York and from the Hudson's Bay Company. [517] In return for borrowing the plants, Banks arranged, named and glued the specimens onto herbarium sheets, so it is not inconceivable that the two specimens in question might have been those given to the Society in 1773 and mounted by Banks.

The rose does not however appear to have been annotated by Backstrom. If it was part of Banks's collection, this might have been an oversight, though given the specimen is now designated the type of the species, it was probably a fairly rare example at the time and one would have thought it would have been annotated as a priority. Because of the differences in annotation, the rose undermines the argument that the orchid might have been part of the collection of specimens Banks borrowed from the Royal Society because surely there would be something consistent about their annotation, either in the hand or in the information included. There is one other possibility that both were part of the Hudson's Bay Company's donation to the Royal Society, but that the orchid was a duplicate specimen. In the report of the committee set up to examine the second collection of material sent by the Hudson's Bay Company in January 1773, they describe how

> In all instances where there were duplicates we have reserved the best specimens for the Museum of the Royal Society and the next best for the British Museum; in such instances where the number of

[515] RS, MS 419, p. 14.
[516] See John Braybrooke Marshall, 'The Handwriting of Joseph Banks, his Scientific Staff and Amanuenses', *Bulletin of the British Museum (Natural History). Botany Series*, vol. 6 (1978), 1-85.
[517] RS, Original Journal Book, vol. 29, 11 January 1776, p. 2.

specimens were more than two, we have presented them to such members of the Royal Society as were desirous of them for their collections.[518]

So duplicates were first given to the British Museum and then to Fellows for their collections. Interestingly, Joseph Banks was a member of the committee who inspected the donations from the Hudson's Bay Company in 1773, so it quite likely that three specimens of the orchid were donated and that Banks requested that he had the third. The image of the specimen (see figure 8) shows insect damage which probably occurred prior to 1800 and such damage might suggest that it was the inferior specimen given to Banks, which ironically outlasted its supposedly superior counterparts.[519]

Figure 8: Specimen of *Coeloglossum viride*, *ORCHIDACEAE*
Photograph taken by Jenni Thomas with the kind permission of Roy Vickery, former collections manager, flowering plants at the Natural History Museum

[518] RS, Original Journal Book, vol. 28, 21 January 1773, p. 53.
[519] My thanks to Roy Vickery, former Collections Manager, Flowering Plants, in the Natural History Museum's Herbarium for his counsel regarding this.

There is also the possibility that Joseph Banks, or another collector acquired the specimens from the Hudson's Bay Company independently of the Royal Society. However, as the second chapter described, given that the culture of secrecy fostered by the Hudson's Bay Company towards their charter trading territory had only recently begun to be broken down thanks to Samuel Wegg's dual positions in the Company and the Society, it seems unlikely that they would be donating to individuals. Furthermore, from the Hudson's Bay Company's point of view, surely it was much better to give to an institution than an individual as it avoided charges of preferential treatment. This however is largely tentative and guesswork and does not irrefutably exclude any of the other possible explanations. In fact, one could construct a similar argument with two further botanical specimens at the Natural History Museum, one of *Hypericum perforatum, Clusiaceae* or St John's Wort and the other, *Rosa virginiana, Rosaceae* both labelled 'New York, Anderson, Dr Marten' and contend that these formed part of the other collection of specimens that Joseph Banks mounted on behalf of the Society. The problem is that without a more concrete or extensive paper trail, discerning objects with Royal Society connections remains largely at the level of conjecture.

Whilst identifying further botanical specimens is difficult because of the potential problem of distinct donors giving to multiple recipients, Stungo's work on the Chelsea Physic Garden specimens demonstrates that botany has defied the fate of all other types of specimen that formed the repository. The existence of so many plant specimens testifies to the comparative ease with which they can be kept. Once mounted, botanical material can be stored and maintained easily. Stungo suggests that the Chelsea Physic Garden donations were unlikely to have been mounted onto herbarium sheets until at least the 1880s and were instead stored in bundles in drawers in the exhibition rooms and it seems that so long as specimens had been carefully dried and pressed even without being affixed to mounts, they could be easily preserved. Their size when not mounted means they require minimal storage and once affixed to herbarium sheets, they can be stored flat in boxes, again in a relatively small space. Obviously some pests do prove problematic to the survival of specimens, not least biscuit beetle, but certainly they are more robust than other of their dried counterparts. In addition, labelling of specimens in comparison with, for example, fossil specimens is easier. Provenance and descriptive information can be written

directly onto the specimen's mount and even when not mounted, labels can be tied to the stalks of the specimens in order to identify them or they can be kept in pieces of folded paper, like the Waring specimens, which identify them. Because of the ease of storage, and the fact that labelling is more effective, specimens are less likely to become divorced from their documentation information. In addition, given Solander's close relationship with Banks, it is likely that he may have shared Banks's passion for all things botanical and the Society's plant specimens may have been the first things that he sorted through when the repository was transferred to the British Museum. Like the Society's book and manuscript collection, herbarium sheets and pressed specimens were much easier to store and maintain and for purely pragmatic reasons, it would be much easier to sort through botanical specimens and store them amongst the rest of the botanical collection in comparison with the larger and more awkward-shaped bird and mammal specimens.

There are further items of natural history from the repository that may still be identifiable today, which left the repository prior to the transfer of the collection to the British Museum. As the first chapter identified, a number of items, particularly the precious and semi-precious stones appear to have disappeared from the repository in the intervening period between inventories being made and the suspicion was that they went missing due to 'theft' or 'embezzlement'.[520] However, as the second chapter noted, items were also removed from the repository for legitimate reasons, particularly pre-1700 and post-1770, when duplicate specimens would be given to interested Fellows. Before 1700, duplicates were given to Robert Southwell and possibly to the Dublin Philosophical Society. This means that some objects may have ended up in places other than the London Museums already mentioned. For example, speaking on the early history of the Royal Society at a meeting of the Sette of Odd Volumes in November 1894, bibliographer and editor Henry B. Wheatley relayed an anecdote that around twenty years earlier Sir Victor Brooke took the horn of an unknown animal purchased at Jamrachs, an auction house in the east end of London,[521] to the Royal Society 'to see whether he could gain any light on its

[520] RS, Original Council Minutes, vol. 3, 18 February 1734, pp. 134-5.
[521] Jamrach's is briefly discussed together with an illustration in Jane Cox, *London's East End: Life and Traditions* (London: Cassell & Co, 2000), pp. 12-13.

history.'[522] It transpired that the horn was noted in Grew's catalogue. Although, at the time, Wheatley was at a loss to explain why it had become divorced from the collection, it is likely that the horn was one of the duplicates disposed of around the time of the Southwell exchange. Although the whereabouts of the horn today has yet to be uncovered, Brooke may have bought the horn as part of his work on antelopes, sheep and goats. William H. Flower describes that it was Brooke's intention to write 'an exhaustive monograph' on the subject, though the book's progress was curtailed due to his wife's poor health and was seemingly never finished.[523]

What appears to have emerged from this chapter's analysis is that the repository seems to have consisted of a substantial and significant collection, which, judging by the British Museum's treatment of it, they were, at least initially, grateful to receive. For those objects that might have survived, poor documentation upon arriving in the Museum, damage to the existing labels which rendered them unreadable and, as will be discussed in the final chapter, poor cataloguing in general, means that few items with Royal Society connections are discernable today. Perhaps surprisingly, with the exception of botanical material, it is the oldest items which featured in Grew that are most readily identifiable and is perhaps testament to the importance of detailed textual and pictorial documentation in identifying historic specimens. In addition, the untimely death of Solander perhaps also resulted in the death of enthusiasm for at least half of the collection and it was instead left to languish in the basement as a relic of a bygone era which was incompatible with the identity of an institution which saw itself as a tool for the entertainment and education of the public. In consequence, there was no regard for age and provenance; it was much more important that a specimen was a good likeness of the species it represented and did not arouse repugnance amongst the Museum's audiences. There was certainly no regard for Swammerdam or the collection his specimens were formerly part of.

[522] Wheatley, p. 31.
[523] William H. Flower, 'Sir Victor Brooke's Scientific Life and Work', in *Sir Victor Brooke Sportsman and Naturalist: A memoir of his life and extracts from his letters and journals* ed. by Oscar Leslie Stephen (London: John Murray, 1894), pp. 27-39 (p. 31).

- CHAPTER FIVE -

'The Soul of the Collection':
The documentation of the British Museum's natural history collections, 1781-1836

Do you consider that [...] a catalogue is of essential importance to any collection professing to be a national one? – I consider that in a national collection of natural history it is quite essential; that such a catalogue constitutes, in fact, the soul of the collection.[524]

In 1835, a Parliamentary Select Committee was set up to investigate 'the condition, management and affairs of the British Museum'.[525] The committee was called for by radical MP for Lambeth, Benjamin Hawes, in 1834 and was apparently prompted by the dismissal of British Museum employee, John Millard, who was responsible for indexing the Museum's manuscripts.[526] However, it was also a response to years of mismanagement and the poor condition of the Museum's collections, particularly its zoological holdings; the latter being publicly commented on as early as 1823, in an article for the *Edinburgh Review*, though also criticised internally as is evident from the Museum's administrative records.[527] Various members of the zoological branch of the Museum's staff were called upon to give evidence including Charles Konig, the Museum's Under Librarian, John George Children, the Assistant Officer, and Extra Assistants George Samouelle and John Edward Gray, the latter who, in April 1840, became the Museum's zoology curator. One of the central concerns of the inquiry was the question of documentation within the Museum, specifically how information was recorded regarding the specimens,

[524] This comment was made by Richard Owen in response to the 1836 British Museum Parliamentary Select Committee's question on the need for catalogues. See British Museum Parliamentary Select Committee, *Report from the Select Committee on the Condition, Management and Affairs of the British Museum with minutes of evidence, appendix and index* [A facsimile of the edition of 1836] (Shannon: Irish University Press, 1968), paragraph 492, p. 45.

[525] British Museum Parliamentary Select Committee, *Report from the Select Committee on the Condition, Management and Affairs of the British Museum with minutes of evidence, appendix and index*, [A facsimile of the edition of 1835] (Shannon: Irish University Press: 1968) and British Museum Parliamentary Select Committee, *1836 Report*.

[526] This is discussed in more detail by Gordon McOuat, 'Cataloguing power: delineating "competent naturalists" and the meaning of species in the British Museum', *British Journal of the History of Science*, 34 (2001), 1-28, Gunther, *Founders of the British Museum*, pp. 75-6 and Edward Edwards, *Lives of the Founders of the British Museum with notices of its chief augmenters and other benefactors 1570-1870* (London: Trübner, 1870), p. 541.

[527] See in particular the BM, Officers Reports 1805-1836 and Standing Committee of Trustees 1781-1836. Traill, pp. 383-393.

whether any catalogues existed and the utility to the Museum's audiences of published material, such as the *Synopsis of the Contents of the British Museum* series. As will become apparent in the ensuing discussion, the evidence presented to the committee suggested that the Museum's record keeping since its inception had been quite seriously flawed and recommended that designing and implementing a system of information management regarding the objects in the Museum ought to be commenced as a matter of urgency.

Uncovering the British Museum's early documentation practices is particularly pertinent to this study because, as will become apparent, one of the major impediments to successfully identifying which, if any, of the former Royal Society specimens survived, is the lack of a paper trail that can be traced backwards from the present day to the repository's donation. Understanding what information was contained in catalogues, inventories and visitor guides regarding the Museum's holdings, and crucially what was omitted will add a further dimension to the diagnosis of what went wrong when the repository was incorporated into the national collection and will provide a more rounded view generally of the repository's fate. This chapter will discuss how information was organised within the Museum from 1781, when the repository was incorporated into the national collection, to 1836, following the publication of the second *Report from the Select Committee on the condition, management and affairs of the British Museum*. It will briefly begin by reviewing the literature which discusses the Museum's documentation practices, in addition to problematising the fact that relatively little has been made of recordkeeping in the general histories of the Museum. It will then turn to assess how information was organised when the repository was transferred to the British Museum in 1781, before examining the development of these systems during the early nineteenth century, with particular reference to the period until 1816. It will also assess how and whether the former repository's objects were incorporated and referred to in these. The documentation of the Museum's avian holdings will then be employed as a case study, to ascertain how documentation changed between 1817 and 1837, when new measures were introduced following the Parliamentary Select Committee's report. The Museum's bird catalogues will be drawn upon since the Bird Group holds one of the largest collections of early manuscript catalogues in the zoology department of the

Natural History Museum, with some forty-seven dating from 1816 to 1843.[528] A detailed examination of the Museum's early avian documentation will be provided with particular reference to its 'Old' and 'Vellum Catalogue', asking what factors prompted their compilation, why their construction was deemed necessary, whilst also endeavouring to understand the rationale behind the manner of each catalogue's composition and again asking whether the Royal Society's specimens are recorded.

Given that documentation was such an important feature of the Select Committee's investigation, particularly in terms of stressing the need for catalogues of the Museum's natural history collections, arranged systematically according to order, genera and species, it is interesting that very little critical attention has been devoted to its analysis.[529] Whilst the general histories of the Museum by William T. Stearn, A. E. Gunther and Edward Edwards make brief references to its early manuscript catalogues, they are more concerned with providing an insight into the Museum's history and its various associated agents.[530] In addition, the work of Marjorie Caygill, J. Mordaunt Crook and David M. Wilson on the British Museum, omit any mention of its natural history documentation, as do the Museum's recent publications on its eighteenth-century collections and Neil Chambers' book concerning Joseph Banks and the British Museum.[531] Where discussion of the Museum's early record keeping does occur, it tends to be in relation to its printed and manuscript holdings, or its

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[528] Please note that the British Museum transferred its collection of natural objects together with a substantial amount of their concomitant manuscript records, specifically registers and catalogues, to what is now known as the Natural History Museum, South Kensington in 1881, though was for a number of years known as the British Museum (Natural History). In the early 1970s, the bird section of the Natural History Museum relocated to the site of Lord Rothschild's former zoological museum at Tring.

[529] For a summary of their findings, see House of Commons, 'An Account of and the Proceedings adopted by the Trustees of the British Museum with reference to Resolutions passed by the Select Committee of this House on the subject of that Institution', *House of Commons Papers* 47.39 (1836), paper 516, points 12-14. Specific instances where the need for natural history catalogues featured in the committee's discussions will be noted during this chapter.

[530] William T. Stearn, *The Natural History Museum at South Kensington: A History of the Museum 1753-1980* (London: Natural History Museum, 1998), A. E. Gunther, *A Century of Zoology of the British Museum through the Lives of Two Keepers 1815-1914* (Kent: Dawsons, 1975), Gunther, *Founders of the British Museum*, particularly pp. 92-5 and Edward Edwards, particularly pp. 577-8.

[531] See Marjorie Caygill, *The Story of the British Museum*, 3rd edn (London: British Museum Press, 2002), J. Mordaunt Crook, *The British Museum* (London: Allen Lane, 1972), David M. Wilson, *The British Museum: A History* (London: British Museum Press, 2002), R. G. W. Anderson, M. L. Caygill, A. G. Macgregor and L. Syson, eds., *Enlightening the British: Knowledge, discover and the museum in the eighteenth century* (London: British Museum Press, 2003), Kim Sloan, ed., *Enlightenment: Discovering the world in the eighteenth century* (London: British Museum Press, 2003) and Chambers.

collection of manmade artefacts.[532] The second book of the three volume history of the Museum's natural history collections, published between 1904 and 1912, provides a slightly more detailed discussion of its early record keeping, though is rather dismissive, describing the bird catalogues specifically as 'occasionally of service in hunting up the history of some of the ancient specimens'.[533] More recently Gordon McOuat has discussed the Museum's early zoology catalogues, particularly John Gray's influential role in revising their design.[534] Only two studies, conducted by Alwynne Wheeler and A. G. Knox & Michael Walters, have considered the Museum's early documentation in detail. Wheeler examines a number of the Museum's early-nineteenth-century catalogues and registers across the zoology section, whilst Knox & Walters focus on the Museum's nineteenth-century avian records.[535] Of the bird catalogues specifically, although studies of the early Museum's bird collections have included examinations of its manuscript records, predominately its 'Vellum Catalogue' series, these have focussed on specific donors or types of collections rather than the catalogues more generally.[536]

As was discussed in the fourth chapter, the latest inventories of the Royal Society's collection were made between 1763 and 1765 and no catalogue or list of the collection given to the British Museum appears to have been constructed. When the repository was transferred to the Museum, it was recorded in their 'Book of Presents'

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[532] See for example Robert Cowtan, *Memories of the British Museum* (London: Bentley, 1872), particularly pp. 275-302, Edward Miller, *That Noble Cabinet: A History of the British Museum* (London: André Deutsch, 1973) and Stephanie Moser, *Wondrous Curiosities: Ancient Egypt at the British Museum* (Chicago: University of Chicago Press, 2007).

[533] R. B. Sharpe, *The History of the Collections Contained in the Natural History Departments of the British Museum, volume II* (London: British Museum, 1906), p. 172.

[534] McOuat, pp. 1-28. The influence of Gray in creating catalogues across the zoological branch of the museum is also discussed in Edward Edwards, pp. 577-8.

[535] Alwyne Wheeler, 'Zoological Collections in the early British Museum – documentation of the collection', *Archives of Natural History*, 23 (1996), 399-427 and A. G. Knox & M. Walters, 'Under the Skin: the bird collections of the Natural History Museum', *Bulletin of the British Ornithologists' Club Centenary Supplement*, 112A (1993), 169-90.

[536] Frank D. Steinheimer, for example, looks at the museum's surviving pre-nineteenth-century specimens in 'Darwin, Rüppell, Landbeck & Co. - Important Collections at The Natural History Museum, Tring', *Bonner Zoologische Beiträge*, 51 (2002), 175-188 and 'The Whereabouts of pre-Nineteenth-Century Bird Specimens', *Zoologische Mededelingen*, 79 (2005), 45-67. See also Alwyne Wheeler, 'Zoological Collections in the early British Museum: the Linnaean Society's Museum', *Archives of Natural History*, 22 (1995), 235-254 and 'Zoological Collections in the early British Museum: the Zoological Society's Museum', *Archives of Natural History*, 24 (1997), 89-126, S. L. Olson, 'The Contribution of the Voyage of H.M.S. Blonde (1825) to Hawaiian Ornithology', *Archives of Natural History*, 23 (1996), 1-42 and Kristin Johnson, 'Type-Specimens of birds as sources for the history of ornithology', *Journal of the History of Collections*, 17 (2005), 173-188 for their discussions and use of manuscript documentation.

as ‘a large collection of natural and artificial curiosities, being the Museum of the Royal Society from the said Society’; no further details of the collection are provided.[537] The ‘Book of Presents’ replaced the practice of reading aloud lists of additions to the Museum’s collections at its Standing Committee meetings as part of the departmental officers’ reports. The standing committee, who tended to meet ten out of twelve months each year, would then have the lists of acquisitions copied into their minutes. However there was a concern that this practice did not reassure the public that care would be taken of the objects that they gave or they would feel confident that their names and associated benefactions to the Museum would be preserved. The combination of these two factors led to the further worry that this would discourage donations.[538] Consequently, in March 1756, it was proposed, and approved at a general meeting a month later, that incoming donations to the Museum ought to be copied in date order into the ‘Book of Presents’, also referred to in the Museum’s administrative records as the ‘Donations Book’ and ‘Benefactions Book’.[539] It was suggested that it should be a rather grand book ‘strongly bound in Russia leather with thin brass plates at the corners’.[540] In addition, because it was specifically designed to satisfy the general public that the name of the benefactor and their objects would be preserved, it was anticipated that the book was likely to be consulted by a non-specialist audience and as such entries should be written in English rather than Latin.[541] The report emphasised the need for the benefactor and date presented to the Museum, usually based on the date presented to the Standing Committee to be consistently recorded and that it should be easily understood by a lay audience.

Consequently, there is a tendency to bulk document objects, in other words, to note that an acquisition occurred, but not to detail all the material that was part of it, as in the example of the Royal Society’s repository. Although a standardised method of description was suggested, namely that all the records be written in English, when specimens were documented individually in the records, this was clearly not adopted. For a number of entries, either a Latin generic or English popular name would be

[537] BM, Book of Presents, 15 June 1781, no pagination.
[538] BL, BM Add 6179, fols 30^{r}-31^{r}.
[539] BL, BM Add 6179, fols 30^{r}-31^{r} and 36^{r}.
[540] BL, BM Add 6179, fols 30^{v}.
[541] BL, BM Add 6179, fols 30^{v}-31^{r}.

provided, whilst in a very small number, both would be given. Further records still simply note the type of object received, such as 'a bird'. However this is because it was expected that catalogues detailing specific objects would be developed alongside the 'Book of Presents'. In the initial proposal to compile a book detailing donations it suggested

> That the entries above mentioned be all transcribed from the Book of Benefactions into the respective catalogues of the Museum, under the classes to which they relate; with the letter B for Benefaction, and the page of the book, added to the end of each article. By this means it will readily be known, which of those things, as they stand together in the Museum were Benefactions, and by whom given without affixing labels to them, as is the custom in some places abroad.[542]

This also provides important clues as to why so much of the museum's early material became divorced from information regarding its provenance. It was expected that catalogues would be developed to marry the two together and a resistance to the use of labels to provide donor information is also hinted at, which perhaps provides a further reason so few of the Royal Society specimens cannot be identified today. The 'Book of Presents' was intended to act as reassurance for those who wished to deposit their objects at the Museum and to ensure that their donation would be remembered. It was not however intended, at least initially, to provide information to interested parties beyond the donor, the date of benefaction, and a brief note on the contents of the gift. It was intended as a public record rather than an internal documentation measure.

By 1758 the system had been implemented, however the hope of putting together catalogues of the collection to complement the 'Book of Presents' does not appear to have been similarly realised. In 1763, it was agreed to pay Daniel Solander £100 to aid Museum curator, James Empsom, in compiling a catalogue of the natural history collection.[543] This possibly resulted in Daniel Solander's 'Slip Catalogue', which he continued until his death in 1782. Whilst it records a large number of the Museum's natural history holdings, it does not note any of the former repository objects, though this is perhaps not surprising given Solander's sudden death so soon

[542] BL, BM Add 6179, fol 30.
[543] 'Papers Relating to the Official Business of the British Museum, 1755-1796', BM Add 31299, 26 February 1763, fol 1[r].

after its transfer. The catalogue does not appear to have been continued beyond his death and the compilation of further detailed catalogues is not apparent until 1807. In fact, judging from a report of a committee appointed to consider the manuals for attendants read at a general meeting of Trustees in July 1781, it seems that the need for detailed catalogues was less pressing than creating a more general guide to the contents of the Museum since it was ordered that 'Dr. Planta and Dr. Gray do report upon some General Catalogue or Inventory, which may serve the purpose of the annual visitation [of Trustees]'.[544] Seemingly, this visitation was a yearly event where the Trustees would be shown around the Museum.

Consequently, Edward Whitaker Gray, who was keeper of natural productions between 1787 and 1806, put together manuals of the various collections. These manuals were created for two reasons; first to aid the Trustees in their annual visitation and secondly to give the exhibiting officers a better idea of the contents of each room. The need for attendants' manuals was particularly necessary since, until the early part of the nineteenth century, visitors would be guided through the Museum by an attendant who would describe the objects on display. Although manuscript copies of the handbooks are no longer extant, they seem to have been a precursor to the *Synopsis of the Contents of the British Museum*. By July 1805, a committee on the exhibiting officers' handbooks suggested that the Museum might be made more 'satisfactory to strangers' if they were to consider whether the handbooks

> if printed for distribution or sale, they might not be serviceable in apprizing those who come to see the Museum, of what they expect to find there.[545]

This appears to be the point at which the *Synopsis of the Contents of the British Museum*, first published in 1808, was conceived. Interestingly, and perhaps not by chance, its publication coincided with the Queen and Royal Family's visit to the Museum on 3 June 1808.[546] The *Synopsis* was intended as a popular guide to the Museum, which aimed to provide a room by room description of its holdings.[547]

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[544] BM, Minutes of the General Meeting of Trustees, CE 1, 13 July 1781, p. 978.
[545] BM, Original Papers, 13 July 1805, fol 785^{v}.
[546] BL, 'Royal Family etc', BM Add 6339, fol. 36^{r}
[547] The *Synopsis* was not the first guide to the museum. The earliest guides appear to date from the early 1760s, see Anonymous, *A View of the British Museum; or a Regular Account Relating to What Is Most Remarkable and Curious to be Seen There* (London: publisher not know, c.1760) and E. Powlett's

Joseph Planta described how 'the public called loudly for such a guide, especially through the Gallery of Antiquities'.[548] As noted in the previous chapter, this seems to demonstrate the Museum's awareness of its audience and their requirements, In this example, the Museum adapted its administrative practices of documentation in order to generate printed material for its public.

Initially two versions of the *Synopsis* were printed; the first, a 'complete one' containing an introduction and 'analytical syllabus of the Library of printed books', and a 'short one', which provided a synopsis of the collection without the introduction and library syllabus that was sold for one shilling instead of two.[549] Again, an increasingly nuanced view of the Museum's audiences is apparent in its acknowledgment that at least two distinct types of visitor existed who required different levels of information. The 'mere *Synopsis*' appears to have been more popular than the 'complete' one, selling almost twice as many copies, 882, in comparison with 488 for the 'complete' in the first three months of sale.[550] It appears that initially the *Synopsis* continued to be printed in two versions, though when this ceased is difficult to discern. Still, numerous editions were published during the nineteenth century until 1856. Initially the *Synopsis* was quite vague; in the case of its account of the Museum's avian collection, it would note the bird order contained in each case of the Museum display, briefly detailing the families represented, and indicating key specimens. This reflects the *Synopsis's* description of the Museum's natural history specimens in general in that very few specimens were referred to individually, rather they would be bulk documented with groups of specimens recorded. Artificial items were more often recorded individually and also more likely to include donor information. For natural history specimens, with the exception of a small number of key objects and sections of the collection donated by one person, it

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The General Contents of the British Museum with remarks serving as a directory in viewing that noble cabinet (London: R & J Dodsley, 1761). A second edition was printed a year later though following this, the series appears to have been discontinued. Finally John and Andrew van Rymsdyk, published two editions of their account of the Museum's collection in 1778 and 1791 see *Museum Britannicum, being an exhibition of a great variety of antiquities and natural curiosities belonging to that noble and magnificent cabinet the British Museum illustrated with curious prints engraved after the original designs, from nature, other objects; and with distinct explanations of each figure* (London: publisher unknown, 1778) and *Museum Britannicum or, a display in thirty two plates in antiquities and noble curiosities in that noble and magnificent cabinet the British Museum after the original designs from nature* 2nd edition (London: publisher unknown, 1791).

[548] BM, Officers Reports, 12 November 1808, fol 137r.

[549] BM, Officers Reports, 12 November 1808, fol 137r.

[550] BM, Officers Reports, 11 February 1809, fols 175r-175v.

seems to have been standard practice to record the content of the case without providing donor information. Over the years, the *Synopsis* became increasingly detailed, both in its description of each species and in detailing the particular specimens contained within each case, again developing in accordance with the perceived needs of the visitor, though still little donor information was included. However, it was also frequently criticised, not least during the 1835 and 1836 Select Committees, as will be discussed in the later part of this chapter.

The introduction in the full *Synopsis* records the Royal Society's gift of its repository under benefactions made by non-Trustees to the Museum.[551] No further information is recorded as to the content of the collection received. There is however evidence of Royal Society specimens being recorded in the *Synopsis*. In the first edition, Room 9 is described as containing 'many species of fossil elephant grinders and some also of the mammoth', which presumably included the mastodon tooth noted in the previous chapter, whilst in Room 11, the foot of a dodo (*Raphus cucullatus*), from the Society's collection, which was part of their purchase from Hubert noted.[552] However, neither of these is recorded as having Royal Society associations. In addition, William Hamilton's volcanic material from Vesuvius, mentioned in the second chapter, and given to both the British Museum and the Royal Society is described as being in Room 8, again without a reference that it came from Hamilton or the Society. Mention of the fossil teeth was included until the 8th edition of the *Synopsis*, published in 1814, when it was omitted altogether and by the 9th edition, published in 1815, it was replaced by an even more general reference to a 'miscellaneous collection of fossils'.[553] By the 14th edition, the skull of a what was described as a 'fossil rhinoceros' or '*Rhinoceros antiquitatis*', which is likely to be the surviving Royal Society specimen, *Coelodonta antiquitatis*, discussed in the previous chapter, appears in the *Synopsis*. Again no reference is made to its Royal Society connections.[554] From the 24th edition, references to volcanic material from Vesuvius

[551] British Museum, *Synopsis of the Contents of the British Museum* (London: Cox, Son and Baylis, 1808), p. xxvi.
[552] British Museum, *Synopsis*, 1st edn, pp. 35 and 48.
[553] British Museum, *Synopsis of the Contents of the British Museum*, 8th edn (London: Cox and Baylis, 1814), p. 55 and 9th edn (London: Cox and Baylis), p. 58.
[554] British Museum, *Synopsis of the Contents of the British Museum*, 14th edn (London: Richard and Arthur Taylor, 1818), p. 61.

are no longer apparent.[555] The 27th edition notes in relation to the dodo foot that it was presented by the Royal Society, though this appears to be an isolated instance since the associations of further items to the Royal Society are not recorded.[556] Finally the 28th edition includes the Society's plesiosaur, noted in the fourth chapter, though rather than saying it was from the Royal Society, a reference is given to Stukeley's article on the specimen in *Philosophical Transactions*.[557]

Adding specimens donated prior to 1808 to subsequent revised versions of the *Synopsis* and a failure, in all but a small number of cases, to note the object's benefactor is also evident amongst items donated to the Museum before 1808 in general and not only amongst the Royal Society's specimens. For example, in the second edition of the *Synopsis*, reference is made to 'several kinds of rhinoceros-bird's bills' one of which is likely to be a specimen of *Buceros rhinoceros* donated by Sloane, however the specimen's association to Sloane is not noted, rather it is grouped with other specimens of a similar kind.[558] Similarly a specimen of *Vultur californianus* or Californian Eagle, recorded in the 'Book of Presents' as having been given by Archibald Menzies in February 1796, was not individually recorded in the *Synopsis* until the 1816 edition and not noted as having been given by Menzies until the 27th edition; this is the same edition that records the dodo as having come from the Royal Society.[559]

Both the 'Book of Presents' and the *Synopsis* appear to have been intended for visitors and were produced for quite specific purposes, which did not include retaining donor information for individual specimens. The first was intended to provide a record of benefactors rather than the specific content of their donation, whilst the

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[555] British Museum, *Synopsis of the Contents of the British Museum*, 24th edn (London: G Woodfall, 1826).
[556] British Museum, *Synopsis of the Contents of the British Museum*, 27th edn (London: G Woodfall, 1832), p. 99.
[557] British Museum, *Synopsis of the Contents of the British Museum*, 28th edn (London: G Woodfall, 1834), p. 153.
[558] British Museum, *Synopsis of the Contents of the British Museum*, 2nd edn (London: Cox, Son and Baylis, 1809), pp. 35 and 48. The dodo specimen is discussed in Julian P. Hume, 'The history of the Dodo *Raphus cucullatus* and the penguin of Mauritius', *Historical Biology*, 18 (2006), 77-8 and makes further comments regarding illustrations of the leg made by John Gray c. 1824 in Julian Pender Hume, Anna Datta & David M. Martill, 'Unpublished drawings of the Dodo *Raphus cucullatus* and notes on Dodo skin relics', *Bulletin of the British Ornithologists' Club*, 126A (2006), 49-54.
[559] See BM, Book of Presents, 13 February 1796, British Museum *Synopsis of the Contents of the British Museum*, 10th edition (London: Cox and Baylis, 1816), p. 45 and British Museum, *Synopsis*, 27th edn, p. 88.

second was hoped to give a general guide to the Museum. The lack of a concerted effort to marry donor information with specimens for the purpose of a public guide, suggests that such information was viewed as relatively redundant to visitors to the Museum. Although, the hope appears to be that more detailed catalogues of the collection would be produced, certainly for the Museum's natural history collection in the years between 1787 and 1807, this appears to have been secondary to developing more general guides or handbooks of the collections, first for attendants, and later to be printed for the use of visitors.

The production of more substantial and detailed catalogues was postponed until 1807, by which time the Trustees ordered that an inventory should be produced in addition to the attendant's handbooks to aid their annual visitation.[560] During Edward Gray's keepership, it was believed that providing the attendants' manuals would be sufficient for the Trustees' visitation. Even as late as 1805, the exhibiting officers' handbooks committee suggested that anything more detailed than the manual, such as a printed catalogue, should not be attempted given what they described as 'the present nature and condition of its contents'.[561] However by 1807, the deficiencies apparent in the natural history department's cataloguing necessitated that action be taken. As a result, Gray's successor, George Shaw, proceeded to assemble a general catalogue of the Museum's zoological holdings. He planned to

> begin with the Linnaean Mammalia, & proceed thro' the remaining branches, some of which having already been prepared by Dr. Solander, Dr. Gray &c. might, with the necessary alterations & additions, be incorporated with the general catalogue.[562]

This catalogue, although unfortunately no longer extant, was clearly an important part of Shaw's work, as he provided regular updates in his monthly reports to inform the Standing Committee of his progress. By May 1808, Shaw had completed the mammal section of the catalogue and was ready to commence the ornithological part, which he completed in March 1810.[563] He continued to work through the various branches of

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[560] BM, General Meeting of Trustees, 28 February 1807, p. 1013.
[561] BM, Original Papers, 13 July 1805, fol 784^{v}.
[562] BM, Officers Reports, 14 March 1807, fol 12^{r}.
[563] See BM, Officers Reports, May 1808, fol 113^{r} regarding commencement of the ornithological section of the catalogue and BM, Officers Reports, March 1810, fol 266^{r} for completion of the catalogues.

zoology, in accordance with the Linnaean system, until his death in 1813. No further mention of Shaw's catalogue appears to be made in the Museum's records.

Still, once again, this type of documentation does not necessarily require the inclusion of donor information. Rather, the purpose of the type of record Shaw appears to have been charged with producing was to aid in contents management and provide a list of specimens that could be checked annually to ensure all were present. In addition, the way in which Shaw described the catalogue he was compiling seems to be more preoccupied with the scientific naming of specimens and division according to genera and species than about recording the source of the donation. As with the *Synopsis* and the 'Book of Presents', at the point at which donor information could be united with the specimen, the demands of the particular method of record keeping did not necessitate the inclusion of such information. This is likely to have caused a problem because the more time that elapsed between recording the individual items of a donation, the less likely it would be that the information would still be available. As curators changed, although their knowledge of the collection may have been passed on orally, because there is no text, particular aspects will inevitably be forgotten or changed as information moves from curator to curator. In addition, as the previous chapter identified, by 1809 many of the labels of specimens purchased by the Royal College of Surgeons were either damaged and therefore unreadable or missing altogether, in addition to, as noted above, a general resistance to including donor information on labels within the early British Museum. This divorcing of specimen and donor information for such a prolonged period is likely to have resulted in it not being possible to regain donor information once it became a more central part of the Museum's documentation methodology.

This will perhaps become particularly apparent by conducting a case study of how natural history specimens were documented between 1816 and 1836 at the Museum using two of the Natural History Museum's surviving early nineteenth-century ornithological catalogues. The first is the earliest surviving of the bird section's handwritten catalogues. It is a large quarto bound volume annotated on the spine of the binding 'Aves/Catalogue/Leach [1813-1832]'. The pages are watermarked '1813' and the catalogue is referred to in later works as the 'Old Catalogue'. The second is a series of small quarto vellum-bound catalogues

watermarked from 1832 to 1838. The first four volumes list the Museum's British birds whilst a further forty detail their foreign specimens, these latter also include a selection of British specimens duplicating information contained in the four British catalogues. By examining when the compilation of each catalogue began and ceased, in addition to analysing the information contained in each will provide an insight into how the Royal Society's specimens that remained in the Museum following the sale to the Royal College of Surgeons might have been incorporated into the Museum's information systems. Both of these catalogues include space for donor information, however in general, in the case of the 'Old Catalogue', the manner of its compilation seems to suggest that it would have not provided donor information unless it was obvious. The 'Vellum Catalogues', although more thorough than the 'Old Catalogue', appear to have been hampered by the lack of existing documentary evidence regarding donors to include the benefactors of older specimens.

The 'Old Catalogue' has the earliest watermark, 1813, of all the catalogues in the Bird Section of the Museum's avian collection (see figure 9). It is comprised of one volume in which, initially, both recto and verso pages represent a different species, though later in the catalogue only the recto page is used, with the verso page either remaining blank, or recording further data about authors of the species name and other significant reference works. Each page is divided into four columns. The first notes the record number, whilst the second provides a synonymy of Latin names for the species plus its popular English, French and, occasionally, German names. The third section records the provenance, under the heading 'country' and the fourth, headed 'presented by', names the donor or vendor. Each specimen on a species page is denoted using lower-case letters of the alphabet. The reference system is based on a combination of the page reference number and the letter from the alphabet which indicates the particular specimen, so the second specimen on the first page would be referred to as '1b'. Although on a number of occasions the compiler neglects to differentiate the specimens on a species page using letters, it is likely that this practice was intended to have been adopted throughout the catalogue. The gender, age and seasonal plumage of the specimens are recorded on occasion, though this is not consistently practiced for all records. Of the 787 specimens recorded, a number are annotated in pencil noting that they are 'in a bad state' or to 'turn out' the specimen. These annotations are in a similar, if not the same hand, as that which annotated the

'Vellum Catalogues'; a point that will be discussed later. Twenty three of the records are also given a further number. These numbers appear to correspond to the specimen's placing in the Museum display.

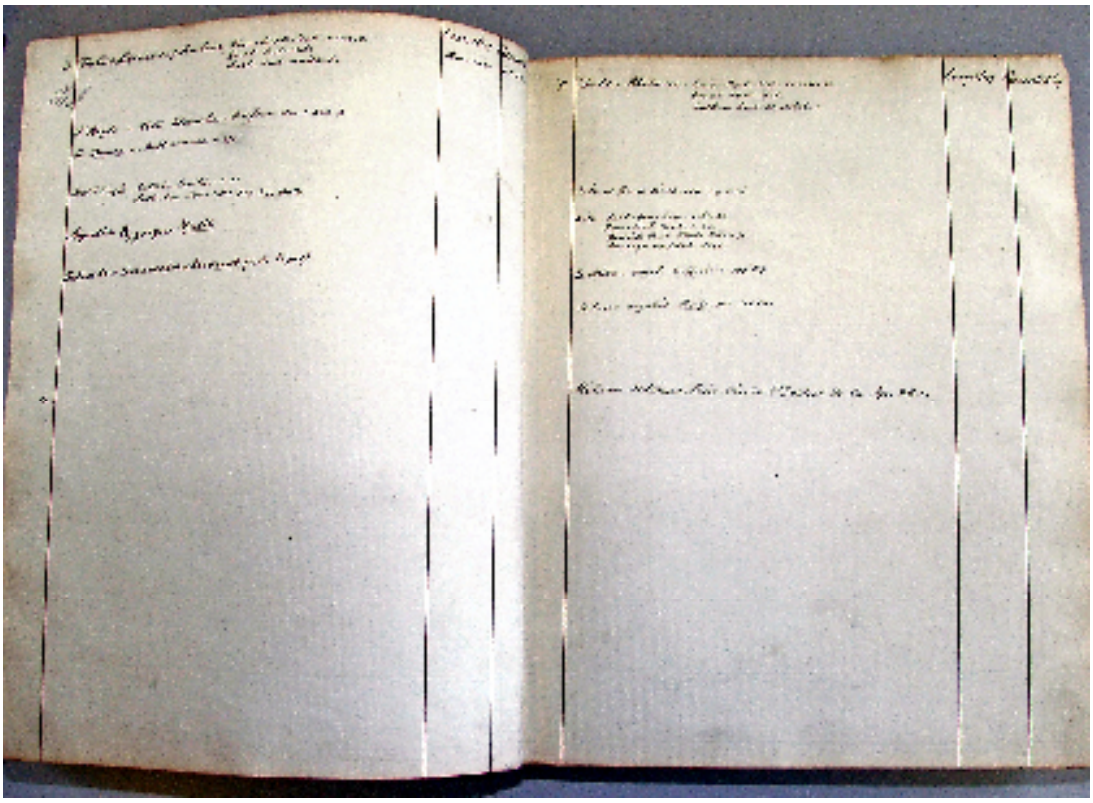

Figure 9: Sample pages of the 'Old Catalogue' (see appendix 5.3)

The 'Old Catalogue' is believed to have been compiled by William Elford Leach.[564] However, the year in which he started it is more difficult to discern. The pages are watermarked 1813, but given that Leach commenced his employment at the Museum in 1814, it is likely to have been begun no earlier than this point. In fact, it is doubtful that it was started before Leach's 1816 *Systematic Catalogue of the Specimens of the Indigenous Mammalia and Birds in the British Museum*, which recorded all the British bird specimens in the Museum at the time since not one of the British birds recorded in that publication appears in his handwritten volume.[565]

[564] Knox and Walters, p. 186 and Wheeler, 'Zoological Collections in the early British Museum - documentation of the Collection', p. 406.

[565] Very few, and possibly only one, copies of the original 1816 catalogue are believed to have survived. John Edward Grey commented in to the 1836 British Museum Parliamentary Select Committee that 'so little notice has been taken of this catalogue, that I have been using the utmost exertions among my friends to obtain a copy of it, and I cannot find that any one of them has it', see paragraph 2614, p.207. The catalogue was reprinted by the Willughby Society in 1882 see William

Unfortunately, Leach's monthly officer's report does not aid in advancing a date of commencement. Unlike Shaw, who was keen to regularly update the Trustees regarding his progress in cataloguing specimens, Leach made no mention of his compiling either the 'Old Catalogue' or his *Systematic Catalogue*. Of more use are the 'Minutes of the Standing Committee of Trustees' and 'Book of Presents'. Specimens donated by Robert Brown, recorded by the Standing Committee on 14 November 1818 and which, according to the 'Book of Presents', were received on 12 August 1818, are included in the 'Old Catalogue'.[566] However, other donations noted in these, such as Addis Archer's donation of a European Bee-Eater in 1818 and the Reverend William Whitear's gift of a Red Godwit in 1819, are not documented.[567] In addition, although Menzies *Vultur californianus* is recorded in the 'Old Catalogue' many of the very early specimens such as Sloane's *Buceros rhinoceros* bill and the Royal Society's *Raphus cucullatus* leg, discussed above, are not mentioned. This indicates that not all incoming acquisitions were added to the 'Old Catalogue' and that specimens which predated its commencement were not necessarily added retrospectively. Generally, it gives the impression that the catalogue was added to on a rather ad hoc basis and indicates that it is not certain that all specimens in the Museum at the time would have been added to the catalogue, including the Royal Society's specimens.

Given the lack of archival evidence, an attempt to date the manuscript catalogue at all precisely is fraught with difficulty, but it seems reasonable to propose that Leach commenced the catalogue no earlier than late 1816 and more likely between 1817 and 1818, and that the catalogue was not consistently updated during the period it was in use. Advancing the date on which the catalogue was discontinued is similarly problematic. Wheeler suggests that the 'Old Catalogue' continued to be added to until 1818 or 1819 before Leach's health worsened in 1820 forcing his

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Elford Leach, *Leach's Systematic Catalogue of the Specimens of the Indigenous Mammalia and Birds in the British Museum*, ed. Osbert Salvin (London: Willugby Society, 1882).

[566] A note in BM, Standing Committee of Trustees, 14 November 1818, fol. 2712^{r}, thanks Brown for his donation, whilst Alwyne Wheeler, 'The Zoological Manuscripts of Robert Brown', *Archives of Natural History* 20 (1993), 417-424 (p. 420), and Wheeler 'Zoological Collections in the early British Museum - documentation of the Collection', p. 406, describes the receipt of the specimens in August 1818.

[567] See BM, Standing Committee of Trustees, fols 2713^{r} and 2739^{r} respectively.

resignation in 1821.[568] This however conflicts with Knox and Walter's assertion that it was used until the commencement of the 'Vellum Catalogue'.[569] An examination of other zoological catalogues commenced by Leach, and evidence given by George Samouelle and John Gray to the 1835 and 1836 Parliamentary Select Committees may go some way in reconciling this divergence of opinion. Leach began a number of catalogues during his employment at the Museum.[570] Those which are still extant include his *Coleoptera* and *Reptilia* catalogues, which are strikingly similar in style and layout to the 'Old Catalogue' of birds. The most extensive of these catalogues was a large quarto volume which, although no longer present, recorded the Museum's insect collection.[571] Whilst the catalogue was begun by Leach, it was added to by George Samouelle when he took over responsibility for the insect collection. As part of his evidence to the 1835 Select Committee, Samouelle was asked whether he knew of any catalogue similar to Leach's insect catalogue, to which Samouelle replied

> when the whole collection was under my care, I proceeded with the birds, and got out 200 species of exotic birds […] there was also a collection of North American birds presented by the Hudson's Bay Company and Captain Sabine, and those collected by Captain Ross and Parry, from the Northern Expeditions.'[572]

Here Samouelle describes how he 'proceeded' to catalogue various donations of bird specimens. His evidence is consistent with entries that appear in the 'Old Catalogue' and therefore cast doubt on the assertion that Leach was responsible for the entire volume.

Although Samouelle's evidence does not exclude the possibility that he began a new catalogue, given that he added to Leach's insect volume, it would seem odd that he began a separate catalogue for the birds and more likely that he added to Leach's existing work. If this is so, then it will aid in dating the 'Old Catalogue'. The exotic birds Samouelle describes were still packed in boxes in July 1820 awaiting the

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[568] Wheeler, 'Zoological Collections in the early British Museum - documentation of the Collection', p. 406.
[569] Knox & Walters, p. 186.
[570] Wheeler, 'Zoological Collections in the early British Museum - documentation of the Collection', discusses the various catalogues contemporaneous to the 'Old Catalogue', pp. 406-8.
[571] Wheeler, 'Zoological Collections in the early British Museum - documentation of the Collection', p. 408.
[572] British Museum Parliamentary Select Committee, *1835 Report*, paragraph 3777, p. 270.

delivery of two cases and consequently it is doubtful that they would have been catalogued before being placed in cases.[573] Moreover, Samouelle did not commence his employment at the Museum until April 1821.[574] Furthermore a report from June 1821 states that the donations of Captains Parry and Franklin were in the possession of Mr Sabine, who was writing an article for the Linnean Society on artic birds, and had yet to be transferred to the Museum, so Samouelle could not have catalogued them before this date.[575] In fact it is more likely that he began cataloguing the specimens in February 1822, given that a report at the time described that 'the quadrapeds and birds of the Artic Expeditions are nearly all stuffed & will shortly be set up in the large cabinet in Room II.[576] This indicates that specimens continued to be documented in the catalogue beyond both 1819 and Leach's employment in the Museum and that Leach was not the sole compiler.

Samouelle's comments also provide an insight into how the catalogues were compiled when he was responsible for the bird collection. When Leach began the catalogue, it seems to have been added to in quite an unsystematic way with some additions to the collection recorded and some not and only part of the pre-1816 collection documented retrospectively. Samouelle appears to have been a little more methodical in his compilation of the catalogue, by cataloguing recent additions to the collection. Based on Samouelle's comments, it appears that his approach to documenting specimens entailed waiting for them first to be stuffed and then set up in display cases in the Museum before he would then add them to the catalogue. He also appears not to have been particularly knowledgeable regarding avian identification. He miscataloged three *Mergus mergansers* from the 1819 Hudson's Bay Company donation as 'velvet ducks'. This is unusual since the name 'velvet duck' is usually used in relation to scoters, notably the *Melanitta fusca* complex, which are not easily mistaken for mergansers. This error is likely to have arisen because Samouelle was not a bird specialist and, crucially, demonstrates how dependent catalogues are on the expertise of their compiler.

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[573] Leach describes the exotic birds in boxes in BM, Officers Reports, 7 July 1820, fol 1354[r]
[574] Samouelle's appointment is discussed in BM, Officers Reports, 9 March 1821, fol 1410[r] and 13 April 1821 fol 1424[r].
[575] BM, Officers Reports, 8 June 1821, fol 1452[r].
[576] BM, Officers Reports, 8 February 1822, fol 1511[r].

In addition, the pages of the catalogue do not appear to have been pre-divided according to a particular naturalist's system prior to the compilation of the 'Old Catalogue' since, although the specimens were organised in the Museum according to the Linnaean system, the 'Old Catalogue' does not appear to be arranged in the same way. The catalogue begins according to Linnaeus' first order of *Accipitres*, by including birds of prey and owls. It continues in numerical sequence by noting birds of the second order *Picae*, but then it jumps to the fourth order, *Grallae*, and then to the fifth, *Gallinae*, before going back to the third order, *Anseres*, then again to the fourth, only then to go back to the beginning and document birds of prey from the first order. This suggests that the catalogue was not pre-divided; rather small sections contain specimens of roughly the same order. The catalogue's bird synonymies also feature a number of Leach's names for the specimens. This reflects a wider problem in the Museum at the time that Leach would attach his own names to specimens and led to the *Edinburgh Review* to describe how 'a second Adam appears to have been at work' where 'strange names are attached to the most familiar of animals'.[577]

Given that a small number of the specimens in the 'Old Catalogue' are dated, the latest being a specimen of *Vanellus melanogaster* from 23 June 1823, it is likely that specimens continued to be catalogued beyond 1822. Still, since a substantial donation, made by Captain King on 8 July 1825, is not recorded in the 'Old Catalogue', additions to the collection may not have been noted much after 1823.[578] John Edward Gray's evidence to the Select Committee in 1836 however, challenges this in its assertion that the catalogue was still being added to during and possibly beyond 1825

> To show that we have always been anxious respecting the formation of catalogues, I have here a plan for forming catalogues which I drew out in 1825 and submitted to Mr Children for his approval; it was adopted by him and upon this plan we continued the 'Old Catalogue's, but from necessity of naming the collection, much progress was not made in it.[579]

[577] Traill, p. 384.
[578] This donation is discussed in Wheeler, 'Zoological Collections in the early British Museum - documentation of the Collection', p. 406 and is recorded in the BM, Book of Presents, 8 July 1825.
[579] British Museum Parliamentary Select Committee, *1836 Report*, paragraph 2500, p. 195.

Part of Gray's plan for the catalogues was to adopt a system of cataloguing whereby one species occupied each page, in other words the information on the number of specimens per species would occupy only the recto and not the verso page.[580] Of the 787 specimens recorded in the catalogue, 314 records, from record 335 onwards, were documented according to this principle (see figure 10). As such, it is reasonable to suggest that these were added in or after 1825, particularly since the hand that entered record 335 and subsequent records is noticeably different to that which made the previous entries. The post-1825 section of the catalogue contains a run of specimen entries from species of roughly the same order; however in a similar way to the pre-1825 section, these are not recorded in numerical sequence. For example, birds from the first order *Accipitres* are recorded, then some from the sixth, *Passeres*.

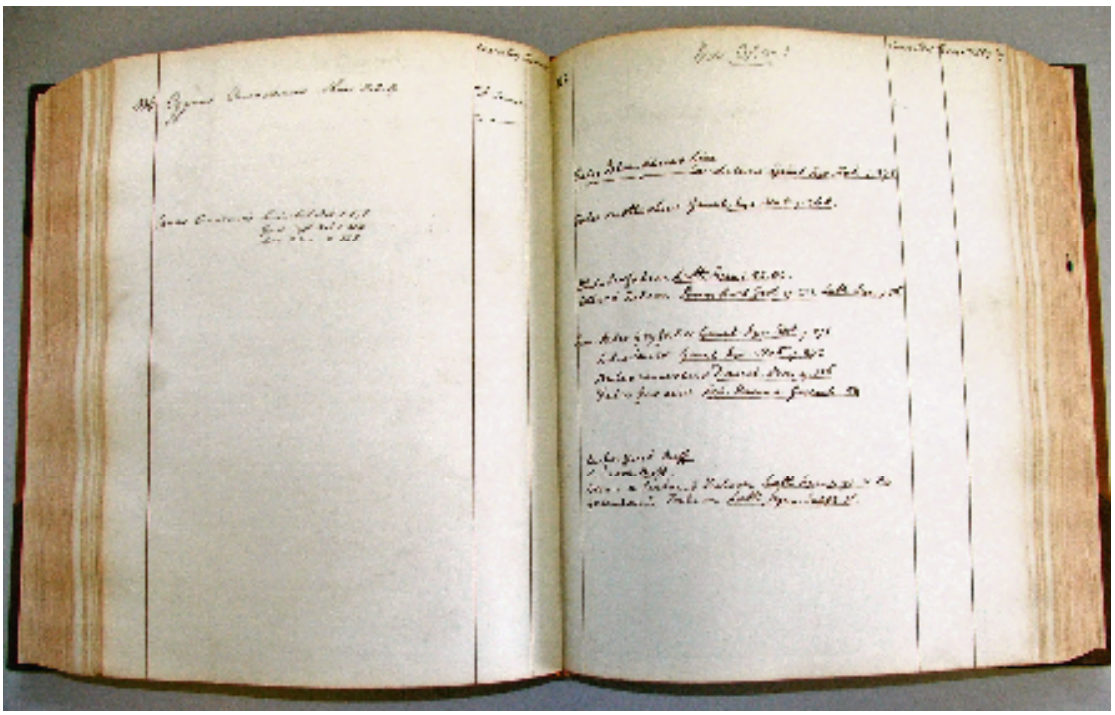

Figure 10: Handwriting difference between records 334 and 335

Based on a comparison between entries in the 'Book of Presents' and the 'Old Catalogue', the majority of the post-1825 additions in the 'Old Catalogue' appear to be of specimens donated no later than July 1826, and a number of which were donated before 1825. This suggests that the latter formed part of a backlog of specimens added retrospectively to the 'Old Catalogue' once they had been identified, named and

[580] British Museum Parliamentary Select Committee, *1836 Report*, paragraph 2500, p. 195.

placed, though significantly, these appear to have been recent additions rather than the pre-1816 collection. In addition, that the Museum had a backlog of recently donated specimens coheres with a report made by Children in November 1825, where he described that John Gray was employed in

> ascertaining the species of all the Birds in the cases and store chests […] preparatory to a complete catalogue of the whole collection.[581]

However this remained at the level of intention since a little under four years later, in May 1829, Children reported that the bird collection had been named and examined still 'with a view to forming a general catalogue of the whole'.[582] Significantly, Children had 'a view' to cataloguing the collection, which presupposes that it had yet to occur. He does however appear to have been engaged in the formation of a systematic catalogue. In a report a year later, Children described how 'a considerable amount of time [has been] devoted to the classed catalogues'.[583] However, this described his contribution to the Museum's catalogue of printed books, for which Children was responsible for the zoology section. Seemingly the production of classed catalogues for objects was of lesser concern to the Museum than producing those for books.

Despite the lack of evidence to suggest that donations received after 1826 were included in the 'Old Catalogue', further evidence provided by Gray to the 1836 Committee suggests that specimens were being recorded in the catalogue even later still. He described how 'the catalogues were continued on to a certain extent until the general collection was removed.'[584] Here Gray is likely to be referring to the removal of the general collection, which was the name used to refer to the collection of non-British birds, to new rooms in 1830.[585] Gray's comments also reveal that progress in cataloguing was slow, which perhaps explains the large number of pre-1830 specimens evident in the later 'Vellum Catalogues', but which do not appear in the

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[581] BM, Officers Reports, 11 November 1825, fol 1937^{r}.
[582] BM, Officers Reports, 9 May 1829, fols 2470^{r}-2470^{v}.
[583] BM, Officers Reports, 8 May 1830, fol 2665^{r}.
[584] British Museum Parliamentary Select Committee, *1836 Report*, paragraph 2496, p. 195.
[585] British Museum Parliamentary Select Committee, *1835 Report*, paragraph 3215, p. 227. Paul Lawrence Farber, *Discovering Birds: The Emergence of Ornithology as a Scientific Discipline, 1760-1850* (Baltimore and London: John Hopkins University Press, 1982), pp. 57-8 discusses the removal of the bird collection and says that they removal began in 1830.

'Old Catalogue'. In fact less than twenty-five of the specimens in the 'Vellum Catalogues' are recorded as having been part of the 'Old Catalogue'.[586] Still it does not seem that the catalogues were continued until the start of the 'Vellum Catalogues' as Knox & Walters suggest. In a report from May 1833, Children described how the compilation of catalogues across the zoology branch had been hindered by the fact that so little of the collection was on display because of a lack of space. A large part was stored in chests and cases away from public view and, as a result of this, the catalogues of the collections were 'necessarily imperfect'.[587] This also suggests that only specimens on display in the Museum were recorded in the 'Old Catalogue' and given the absence of Sloane's rhinoceros bird's bill and the Royal Society's dodo, both of which were on public view at the time, not everything on display was documented.

Not one of the former Royal Society's bird specimens is included in the 'Old Catalogue'. This could be for a variety of reasons, first and perhaps most obvious is that there were none left; they had all either perished or been sold to the Royal College of Surgeons. However, given the presence of the dodo specimen, notwithstanding that it was a unique item, which presumably the Museum was keen to preserve, at least 375 avian specimens were transferred from the Society to the British Museum, and surely more than one survived. Secondly, only 206 of the 787 specimens catalogued record the item's benefactor or vendor. Given that the Museum's priority between the repository's transfer and 1807 was to provide general guides to the Museum, by the time the catalogues began to be compiled in late 1816, and more likely in 1817, information regarding the specimens may have been lost or forgotten. Labels, as noted above, are likely to have been damaged sufficiently to render them unreadable, if the specimen had not become detached from its label altogether or had ever had a label detailing its donor in the first place. Consequently, it is possible that the repository's former specimens became similarly divorced from their labels and by the time the catalogue was compiled, no one remained to recall the specimens' former associations. Finally, it may be that the majority of the Society's specimens were kept in storage and since only those items on display were

[586] This challenges Knox & Walters' proposition that significant overlap exists between the *Vellum* and 'Old Catalogue'*s*, p. 186.
[587] BM, Officers Reports, 11 May 1833, fols 3338^{r}-3339^{r}.

catalogued, particularly recent additions to the collection, and not all of those, the Society's specimens were overlooked. In fact, for the items of natural history that formerly belonged to the Society and which had survived the purges of previous decades, the majority would have been kept in storage. As Children described in his evidence to the 1835 Select Committee

> A very large proportion of specimens now exhibited was, in order to preserve them from destruction, kept in boxes and stowed away wherever space could be found for them; as for instance, a vast number of mammalia, the greater portion of the birds, the whole of the reptiles, the fishes, a very large quantity of the shells and other articles.[588]

Seemingly, it was only when the zoology collections were moved from storage to be put on display, that detailed catalogues listing all specimens could be produced.

The 'Vellum Catalogues' provide a much more comprehensive record of the Museum's early-nineteenth-century collection of birds than the 'Old Catalogue'. They were part of a series of catalogues developed across the natural history department of the Museum in the 1830s.[589] The forty-four volumes are divided systematically according to order, genus and species. The first four volumes record the Museum's British birds and are arranged according to the Reverend Leonard Jenyns's system; this arrangement also reflects the specimens' placing in the Museum.[590] The remaining volumes are largely comprised of the Museum's non-British bird collections. The catalogues are similarly divided according to their spatial arrangement in the Museum with each bird grouping being represented by a single volume or group of catalogue volumes. By 1832, as evidenced in the *Synopsis* of that year and described during the Select Committee, non-British bird specimens were organised chiefly according to Coenraad Jacob Temminck's system.[591] The table

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[588] British Museum Parliamentary Select Committee, *1835 Report*, paragraph 3134, p. 221.
[589] Wheeler, 'Zoological Collections in the early British Museum - documentation of the Collection', p. 408.
[590] Children discusses the spatial and catalogue organisation of the British bird collection in BM, Officers Reports, 6 January 1836, fol 4227^{r}.
[591] See British Museum, *Synopsis*, 27th edn (London, 1832), p.82 and British Museum Parliamentary Select Committee, *1835 Report*, paragraph 3123, p. 221.

below (figure 11) shows how the various 'Vellum Catalogue' volumes of non-British birds were structured and confirmsthat they largely adhere to Temminck's system.[592]

Volume	Pages	Description	Order of species based on Temminck	Temminck's System
5-7	1-196	Birds of Prey and Owls	Rapaces	1. Rapaces
8-9	1-146	Crows, Jays, Nutcrackers, Magpies, Chough, Starlings, Thrushes, Grackle, Orioles, Rollers, Crows, Jays, Shrikes, Birds of Paradise	Omnivores/Insectivores	2. Omnivores
10-17	1-642	Shrikes, Flycatchers, Warblers, Manakins, Manakins, Thrushes, Warblers, Wagtails, Pipits	Insectivores	3. Insectivores
18-21	1-295	Tanagers, Tits, Buntings, Finches, Larks, Crossbills	Granivores	4. Granivores
22-25	1-320	Parrots, Barbets, Trogons, Turacoes, Woodpeckers, Hornbills	Zygodactyli	5. Zygodactyli
26-29	1-268	Bee-eaters, Sunbirds, Babblers, Humming Birds, Nuthatches	Anisodactyli/Alcyones	6. Anisodactyli
30	1-50	Bee-eaters,	Alcyones	7. Alcyones

[592] Michael Walters, *A Concise History of Ornithology* (New Haven and London: Yale University Press, 2003), pp. 209-10 very usefully lists Temminck's system.

		Kingfishers		
31	1-77	Swallows, Nightjars	Chelidones	8. Chelidones
32-33	1-103	Pigeons, Doves	Columbae	9. Columbae
34-35	1-143	Game Birds	Gallinae	10. Gallinae
36	1-10	Pratincoles, Waders, Bustards	Alectorides/Cursores	11. Alectorides
37	1-34	Pratincoles, Waders, Bustards	Alectorides/Cursores	12. Cursores
38-40	1-192	Spoonbills, Herons, Waders, Rails	Grallatores	13.Grallatores
41	1-2			
42-44	1-221	Swans, Ducks, Geese, Gulls, Terns, Grebes, Cormorants, Darters, Petrels	Pinnatipedes/Palmipedes	14. Pinnatipedes 15. Palmipedes

Figure 11: Table indicating the arrangement of the 'Vellum Catalogues' in comparison with Coenraad Jacob Temminck's system

Each species occupies one recto page (see figure 12 and appendix 5.1 and 5.2). These are divided into four columns; the first lists the 'Vellum Catalogue' page reference and also the Museum accession or register number, if the specimen was donated in or after 1837. The second column is the largest and details a partial species synonymy including the various Latin names given to the species together with the naturalist who chose the name, plus the popular English and French names with their author. Occasionally local names are noted, particularly the 'Javan' names for specimens sent from the region by the East India Company. The third column records the location where the specimen was found; this can range from a specific geographical area, such as 'Hudson's Bay', to a much wider region for example, 'North America'. The final column notes the donor of the specimen. These donations appear to come from a diverse range of sources including private individuals, for example Major General Hardwicke's substantial bequest, and organisations such as trading companies and Museums. The verso pages are largely blank, but for a small number which appear to have been annotated by subsequent curators. The recto pages of each volume are numbered and all specimens recorded on a page are distinguished

by a letter so, in a similar way to Leach's system in the 'Old Catalogue', the second specimen on page 101 of volume 30 would be referred to as '30.101.b'. The 'Vellum Catalogue' reference, in addition to any later register numbers, is included on the specimen labels. However, interestingly, the reference to the 'Vellum Catalogues' on the label notes the page and specimen number, but not the specific volume of the catalogue in which the specimen is documented. The gender, age and seasonal plumage are recorded for some of the specimens, though this is not consistently practiced throughout the catalogues. Further reference numbers are also recorded; a small number of which relate to the 'Old Catalogue' together with others of an unknown origin. It is perhaps reasonable to speculate that these numbers relate to the case numbers in which the specimen was displayed; however unlike the earlier numbers in the 'Old Catalogue', there are no records of cabinet numbers to verify this supposition.

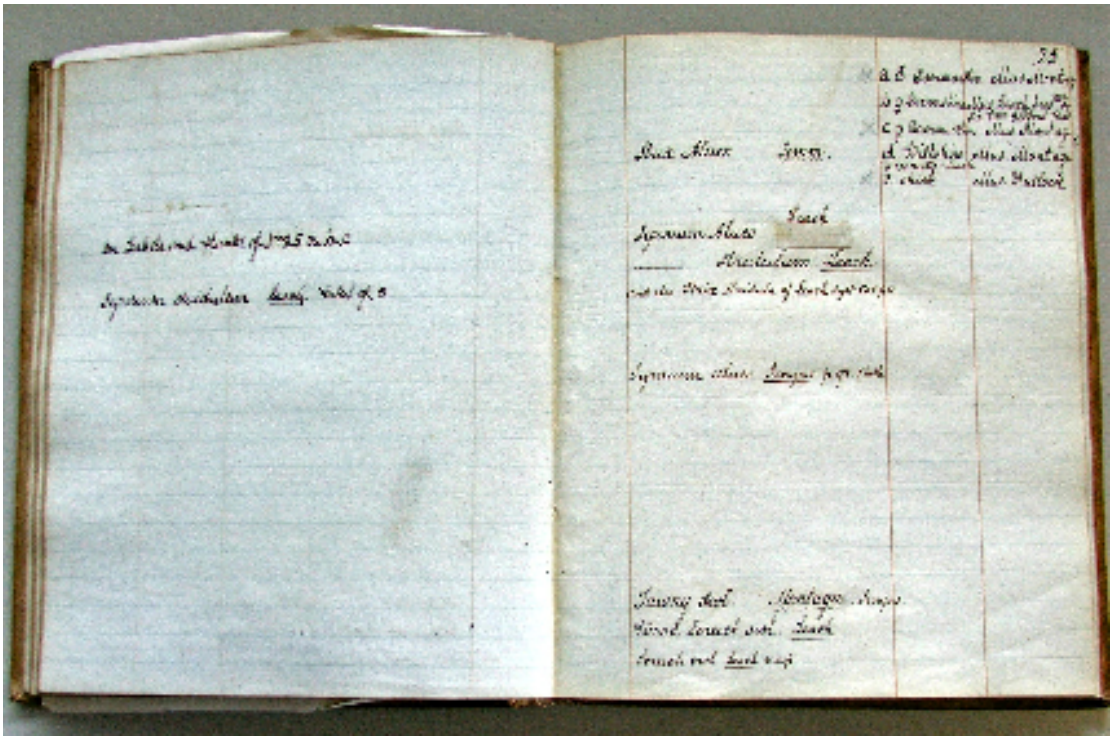

Figure 12: Sample page of 'Vellum Catalogues'

In a similar way to the 'Old Catalogue', a number of entries are annotated in pencil with 'turn out', 'in a bad state', and 'in store chest', in a similar, if not the same hand, as that which annotated the earlier catalogue. As Charles Konig described in 1822, initially stores chests were constructed 'for the preservation of skins and other

objects of zoology'.[593] The skins, the majority of which had yet to be stuffed, were kept in chests in order to prevent the damage from dust and moths which reaped such havoc amongst the earlier specimens in the Museum. Furthermore, as noted above, these chests continued to be used in the 1830s as a report made by Children in June 1833 identifies: 'the greater part of the skins both Mammalia and Birds were stowed away (not stuffed) in store chests in the basement story.'[594] Prior to their move, a large part of the collection was stored in chests and not on view to the public. By August 1833, there were still 625 bird skins in the store chest, of which 497 were duplicates.[595]

Unlike the 'Old Catalogue', the 'Vellum Catalogues' appears to document the majority of specimens in the Museum at the time, including a number of very old specimens, such as five from Sloane's original bequest. Of the 5912 records, 4535 record the provenance of the specimen, whilst 3425 note the donor or vendor. The percentage of specimens for which provenance and donor information is recorded is significantly higher than that of the 'Old Catalogue' and perhaps suggests a perception on the part of the curators of the increased importance of such information. Even so, for a considerable number of the donations, the benefactor is not specified. When Children was asked by the 1835 Select Committee regarding the Museum's natural history specimens in general why object labels did not include the specimen donor, he replied that most did, with the exception of those items that were purchased and because 'a great many that we have are old specimens, and we do not know from whence they came'.[596] It may be for the same reason that a little under 1400 of entries in the avian 'Vellum Catalogues' do not record the benefactor. In fact, Royal Society specimens are similarly absent from the 'Vellum Catalogues' as they were in the 'Old Catalogue', again presumably either because most had been disposed of and, for those that did remain, a lack of documentation prevented identification.

Advancing dates of commencement and discontinuance for the 'Vellum Catalogues' are as problematic as dating the 'Old Catalogue'. Knox & Walters suggest that the forty-four volumes were compiled by George Robert Gray, who

[593] BM, Officers Reports, 13 December 1822, fol 1597^{r}.
[594] BM, Officers Reports, 8 June 1833, fol 3371^{r}-3371^{v}.
[595] BM, Officers Reports, 10 August 1833, fol 3413^{v}.
[596] See British Museum Parliamentary Select Committee, *1835 Report*, paragraph 3170, p. 223.

began his employment at the Museum in 1831, and that entries cover the period up until 1837.[597] Wheeler agrees that all were compiled by George Gray, though rather than suggesting a specific range of dates that the entries cover, advises that the watermarks on the pages of the zoological catalogues in general are dated between 1832 to 1840, whilst the watermarks of the bird catalogues specifically range from 1832 to 1838.[598] The main problem with both of these accounts is that the catalogues are treated as a forty-four volume series. In fact, they represent two sets of catalogues; one of four volumes detailing the British birds, and forty noting the Museum's foreign avian specimens, which were compiled by different people, at different times and according to different rationales. Historically, the British and non-British collections were kept separately in different rooms. Although Children called for the collections to be merged in 1828, this suggestion was met with resistance from the Trustees.[599] Consequently, even in the 1830s, the collections remained divided and this physical separation appears to have been mirrored in the Museum's record keeping.

The foreign bird catalogues were compiled, as Wheeler and Knox & Walters note, by George Robert Gray. There is however a question over when they were commenced. During his evidence to the Select Committee in July 1835, Children answered in response to the question of whether any catalogues of natural history existed

> They have been begun, but they are not finished; in fact, there is so much more to do than the hands we have can do that it is utterly impossible to make a general correct catalogue at present.[600]

Wheeler's paper appears to assume that the catalogues being referred to were the 'Vellum Catalogues', however further probing of Children by the Select Committee regarding these catalogues reveals that he may have been describing earlier catalogues. When asked by the Chairman when the catalogue was commenced,

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[597] Knox & Walters, p. 186.
[598] Wheeler, 'Zoological Collections in the early British Museum - documentation of the Collection', pp. 408-9.
[599] BM, Officers Reports, 8 March 1828, fol 2270[r].
[600] British Museum Parliamentary Select Committee, *1835 Report*, paragraph 3054, p. 216. Wheeler comments on this paragraph in Wheeler, 'Zoological Collections in the early British Museum - documentation of the Collection', p. 408.

Children responded, 'I believe it was by Dr Leach.'[601] Clearly the unfinished catalogues that Children was referring to were those of Leach, in other words the 'Old Catalogue', and not the later 'Vellum Catalogue' series. Leach could not have started the 'Vellum Catalogues' as the earliest watermark is some ten years after his resignation from the Museum. If this is the case, then it calls into question whether the 'Vellum Catalogues' compilation had commenced by July 1835. This is echoed in Charles Konig's evidence to the same committee

Chairman – Is there any general catalogue of objects in the Natural History department

Konig – No, not a general catalogue; there is an Old Catalogue, which does not apply any longer to various collections.[602]

Again the reference is to the 'Old Catalogue', and not the later 'Vellum Catalogues'. John Gray's evidence to the 1835 committee also seems to support the idea that at this point the 'Vellum Catalogues' had not been commenced, describing how

I am more especially employed in naming and arranging specimens, with the intention of cataloguing them, when so arranged.[603]

By September 1835, the 'Vellum Catalogues' do appear to have been started since Children describes in his monthly report that

The catalogues which have been begun by Mr Gray and Mr George Gray are on an excellent plan & will prove eminently useful.[604]

This suggests a much closer link between the Select Committee and the creation of the 'Vellum Catalogues' than has hitherto been characterised. Less than two months after the committee highlighted the lack of catalogues, John and George Gray appear to have begun to compile them. This assertion is perhaps undermined by John Gray's evidence to the 1836 Select Committee, where he states

[601] British Museum Parliamentary Select Committee, *1835 Report*, paragraph 3055, p. 216.
[602] British Museum Parliamentary Select Committee, *1835 Report*, paragraph 2736, p. 196.
[603] British Museum Parliamentary Select Committee, *1835 Report*, paragraph 3212, p. 227.
[604] BM, Officers Reports, 4 September 1835, fol. 4052^{r}.

Since the collection has been removed to new rooms we have commenced a new series of catalogues; and all the time that could fairly be devoted to it, after arranging the collection and putting the specimens in order has been given to it.[605]

He then produces mammal and reptile catalogues which provide examples of the 'new series of catalogues' which he goes on to describe as having been commenced 'about two years ago'.[606] It is highly likely that he is describing the 'Vellum Catalogue' series, but this seems to conflict a little with his previous statement that there is an intention to catalogue once the specimens are arranged, and directly with the evidence given by two of his superiors, Konig and Children, who less than a year previously, stated that the only catalogues that existed were the 'Old Catalogue'*s*.

It is difficult to reconcile the various accounts. One possible explanation could be that the mammal and reptile catalogues were started in around 1834, but that the bird catalogues were commenced later, but this does not cohere with the report from September 1835 in which Children stated that both John and George Gray had recently begun compiling catalogues. However the discrepancies may result from miscommunication and a lack of understanding of the Museum's day to day functioning on the part of the more senior staff. This is perhaps supported by Children's evidence to the 1836 Select Committee. When asked about catalogues, having stated to the 1835 Committee that no catalogues existed, he answered that 'I understand that Mr Gray began [catalogues] two years ago'.[607] When pressed by the chairman

Chairman: It has only lately been brought under your notice

Children: I am aware that it has been going on, but I cannot speak as to the exact time when it began.[608]

Some misunderstanding appears to have occurred regarding the catalogues and this example highlights how problematic it can be to interpret the nuances of the printed and archival material in order to gain an improved understanding of the catalogues.

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[605] British Museum Parliamentary Select Committee. *1836 Report*, paragraph 2496, p. 195.
[606] British Museum Parliamentary Select Committee, *1836 Report*, paragraph 2499, p. 195.
[607] British Museum Parliamentary Select Committee, *1836 Report*, paragraph 2866, p. 230.
[608] British Museum Parliamentary Select Committee, *1836 Report*, paragraph 2867, p. 230.

The British bird catalogues were started later in January 1836 by Adam White.[609] Unlike the non-British volumes, which George Gray viewed as an 'inventory of the General Collection',[610] the British volumes were constructed at the request of Children to demonstrate how a more scientifically orientated *Synopsis* of the Museum's contents might look, and upon which specimen future editions could be based.[611] By July 1836, it appears to have been largely completed since Children sent a letter to Sir Henry Ellis together with 'a specimen of the plan on which I think a synopsis of the zoology of the British Museum should be drawn'.[612] The end date for the non-British volumes is likely to be significantly later. In 1838, Children reported to the Museum's Trustees that the mammal and reptile catalogues were complete but for 'a few recent acquisitions', whilst the compilation of the forty volume bird catalogues was also progressing well.[613] Moreover, in a report to the British Museum's Trustees in 1839, Children described how George Gray had 'catalogued 681 specimens of birds – registered from March 1838 to March 1839' which confirms that the catalogue was still being added to with new accessions in 1839.[614] However the inclusion of the Museum registration number for those specimens which arrived after 1837 indicates an even later end date. The registration number is prefixed by the year of registration and the latest cluster of numbers in the 'Vellum Catalogues' includes donations and purchases registered in 1842 and 1843. Unlike earlier donations where specimen documentation could occur a number of years after the specimen's accession into the Museum collection, by 1837 a clear protocol seems to have been developed, whereby an object's registration is likely to have taken place fairly shortly after its arrival in the Museum, as discussed in a report to the Trustees of the Museum made by John George Children 'All new acquisitions, on arrival, have a ticket, with a number, affixed to them, and a corresponding number is entered in a book called the "Inventory"'.[615]

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[609] BM, Officers Reports, 6 January 1836 fol 4227[r].
[610] BM, Officers Reports, 4 September 1835, fol 4061[r].
[611] 'On the Method of Improving the Synopsis', Natural History Museum (NHM), Report Book, DF205/2, 12 December 1835, pp. 1-4.
[612] BM, Officers Reports, 7 July 1836, fol 4533[r].
[613] NHM, Letters and Reports 1828-1840, DF105/1, 14 June 1838, paper 92.
[614] NHM, Letters and Reports, 4 June 1839, paper 128.
[615] NHM, Letters and Reports, 14 June 1838, paper 92.

It is likely that the 'Inventory' described above is the Museum's *Zoological Register* which began in March 1837. Consequently the years that prefix the registration number can be viewed as a fairly accurate representation of when an object entered the Museum. Although there are a few anomalous registration numbers which represent years much later than 1843 in the 'Vellum Catalogues', it is possible that these refer to specimens received before 1837, which were given a registration number on discovery of their not already having one. A similar practice appears to have occurred for a later series of catalogues which record the Museum's collection of bird skeletons where each entry, regardless of whether it was received prior to 1837 was given a later registration number. The registration numbers suggest that the 'Vellum Catalogues' were being updated as late as 1842 and 1843. This is significant because the first two of George Gray's series of printed catalogues were published in 1844 and indicates that his handwritten catalogues may have been very closely linked to the published versions.[616] It also more adequately explains why the 'Vellum Catalogues' ceased to be continued, namely because they began to be superseded by George Gray's printed catalogue series. A comparison of the specimens recorded in the *Zoological Register* and the 'Vellum Catalogues' does however suggest that not every specimen registered in the Museum was recorded during the period. In fact less than half of the specimens registered between 1837 and 1843, appear in both sources.

One slight mystery remains since British bird specimens are included in the forty volumes of supposedly non-British birds. Although initially the British and non-British birds were kept in separate rooms and known as the British and general collections respectively, at a subcommittee of the natural history department in May 1839, the decision was taken that the pressure of space allotted to the zoology department's collections necessitated that the British birds be incorporated into the general collection.[617] Notwithstanding this, the Trustees emphasised the importance of the British birds remaining somehow distinct from the non-British collection by suggesting that 'a coloured stand or ticket' might be used to indicate a British

[616] 1844 saw the publication of parts I and III of Gray's catalogues, see George Robert Gray, *List of the Specimens of Birds in the Collection of the British Museum. Part I - Accipitres* (London: British Museum, 1844) and *List of the Specimens of Birds in the Collection of the British Museum. Part III. Gallinae, Grallae and Anseres* (London: British Museum, 1844).
[617] BM, Sub-Committee Minutes, 29 May 1839, p. 171.

specimen.[618] This physical merger seemingly infiltrated the compilation of the catalogues and is later manifested in George Gray's printed volumes. It does not however explain why the British birds were only partially transferred, though it seems likely that the published versions, which followed in the 1840s, rendered the transfer of British birds from one catalogue to the other redundant.

Drawing on an analysis of the documentation processes at the Museum with respect to its bird holdings, we also gain an insight into how natural history specimens in general were recorded at the Museum and why so few of the Museum's early collection in general are identifiable today. Of the Royal Society's natural history specimens specifically, for those that remained at the Museum beyond 1809, many are likely to have been kept in storage and are unlikely to have been recorded in Leach's series of catalogues. Even if they were on exhibition and were catalogued, it is probable that they had become divorced from their original labels. Consequently, by the time the 'Vellum Catalogues' were introduced, which provided a more comprehensive record of the Museum's natural history holdings than any of the catalogues that predated them, very few of the donors of their pre-nineteenth-century specimens could be identified. This is because the Royal Society did not provide a list of specimens sent to the British Museum and the Museum did not document new specimens individually when they entered the collection, or soon after the collection's arrival. However this was because the Museum's priority, arguably until Leach's catalogue, was to provide general guides to the collection and, later, an inventory which did not necessitate that donor information be recorded. By the time information on specimen's benefactors was deemed more relevant, the paper trail to early gifts made to the Museum had been largely lost due to damaged and missing specimen labels and the absence of catalogues to help make connections between specimens and their donors. As the fourth chapter identified, without a clear paper trail to connect specimens with their donors, conclusive identification is impossible.

A number of wider narratives also emerge as part of a study of the Museum's documentation systems which, although perhaps not directly relevant to the Royal Society's repository also resonate with some of the broader themes which have

[618] BM, Sub-Committee Minutes, 29 May 1839, p. 171.

become apparent as part of the discussions of the earlier chapters. First, is the notion of the primacy of exhibition; although the Museum aspired to produce detailed catalogues, its priority was to ensure that visitors and Trustees could be effectively guided around the Museum. In consequence, the documentation systems that were developed included only information deemed relevant for that purpose and so names of the donors of specimens were omitted. Furthermore, successive keepers noted the issue of arranging the collections for display prior to cataloguing them. In the early 1820s, George Samouelle, whilst recording the North American collections, was clear that it was only after the birds had been placed in the case that he proceeded to catalogue them.[619] Similarly, John Gray's evidence to the Select Committee identified that the naming and placing of specimens occurred prior to their being catalogued.[620] That catalogues were created only after object arrangement is perhaps intuitive, but it does clearly demonstrate the idea that Museum viewed itself as an exhibition space which prioritised display over cataloguing. This, in addition to the various moves between rooms of the general and British collections, plus the constant flow of accessions and a lack of staff to undertake naming and arranging prior to adding them to the catalogue, inevitably inhibited the production of catalogues.

However, the same does not appear to be true of the Museum's library and manuscript holdings. Numerous catalogues were produced in the early nineteenth century of various collections and new acquisitions. In fact Children, rather than being engaged in producing catalogues of the natural history collection, which, judging from his monthly report in November 1825, he was keen to commence, was diverted away from this in 1826 by the Trustees, who required that he compile a classed catalogue of all the printed works of zoology in the Museum.[621] Based on his report from February 1828, he continued to be engaged in this work for some eighteen months.[622] In a similar way to the findings of the second and third chapters, seemingly the printed word took priority over physical objects, this time in terms of producing catalogues. This is perhaps because printed and manuscript works, and similarly manmade artefacts, were easier to name in catalogues than their natural history counterparts.

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[619] British Museum Parliamentary Select Committee, *1835 Report*, paragraph 3777, p. 270.
[620] British Museum Parliamentary Select Committee, *1835 Report*, paragraph 3212, p. 227.
[621] See BM, Officers Reports, 11 November 1825, fol. 1937^{r} and BM, Officers Reports, 11 November 1826, fol 2068^{r} where Children describes his working on the classed catalogues.
[622] BM, Officers Reports, 9 February 1828, fols 2248^{r}-2249^{r}.

When both the 'Old' and 'Vellum Catalogues' were produced, taxonomic systems and naming were highly contentious, unstable and difficult issues.[623] The combination of a limited number of avian reference works, the large numbers of new species being discovered due to the expansion of British Empire and an increasing professionalism within the natural sciences, meant that specimen naming was a time intensive and difficult process. This is apparent from the inclusion in both the 'Old' and 'Vellum Catalogues' of non-descripts, particularly those of non-European birds. The extensive synonymies for each species which in addition to Latin and English names also detail the French and occasionally local names also reflect the instability of taxonomic systems at the time. Such synonymies were particularly important because the catalogues were produced during the period before strict rules of nomenclature had been proposed, so having a list of the various names applied to the species was necessary to be sure of the species the particular specimen represented.

The problems associated with classificatory systems are also reflected in the rationale behind the discontinuance of the ''Old Catalogue'' in favour of the 'Vellum Catalogues'. One of the major differences between the 'Old' and 'Vellum Catalogues' is that both the verso and recto pages of the 'Old Catalogue' were used to represent species. In other words one species occupied each verso and recto page, whereas in the later catalogue a species would occupy the recto page only. The reasoning behind adopting the latter system was explained by John Gray to the Select Committee that 'from the mode of their construction they can be easily arranged in any system which it may be desirable to adopt, every species being written upon a separate leaf'.[624] He described that the idea stemmed from a plan he wrote in 1825, transcribed into the minutes of the 1836 Select Committee, to demonstrate 'that we have always been anxious respecting the formation of catalogues'.[625] Point one of the report states that 'every species [is] to have a separate leaf devoted to it, so that at any future time the leaves may be separated and bound in any other form'.[626] Gray was conscious that a

[623] Harriet Ritvo, *The Platypus and the Mermaid and Other Figments of the Classifying Imagination* (Cambridge, Massachusetts: Harvard University Press, 1997) and Daniel Headrick, *When Information Came of Age: Technologies of Knowledge in the Age of Reason and Revolution* (Oxford: Oxford University Press, 2000) provide particularly interesting discussions of this.
[624] British Museum Parliamentary Select Committee, *1836 Report*, paragraph 2496, p. 195.
[625] British Museum Parliamentary Select Committee, *1836 Report*, paragraph 2500, p. 195.
[626] British Museum Parliamentary Select Committee, *1836 Report*, paragraph 2500, p. 195.

catalogue needed to flexible enough to be ordered in a number of ways.[627] Although initially Gray attempted to continue the 'Old Catalogue' based on the principle of only the recto page containing species information, too many of the specimens had been recorded according to Leach's method, which rendered the catalogue superfluous to Gray's purpose. He described

> The reason Dr Leach's catalogues were discontinued was that he had entered two or sometimes three species upon one page; and as both sides of the leaf were written on, they could not be arranged in any form that might be desired.[628]

As the repository for the national collection, the British Museum appears to have wanted to be able to respond quickly to shifts in thought regarding the best system to use, particularly with respect to its zoological collections. As such the 'Vellum Catalogues' could be quickly disbound and rearranged if it was decided that a new system ought to be adopted.

Not only does the construction and detail of the catalogues indicate the Museum's need for flexible catalogues, they also hint at the need for scientifically rigorous catalogues, which is perhaps a further aspect of the impetus behind their construction. The Select Committee were highly critical of the *Synopsis of the Contents of the British Museum* series that detailed the specimens on display in the various cases of the Museum. As early as the 11th edition, published in 1817, an introductory paragraph advised the public 'that the following compendium synopsis is merely intended for Persons who take the usual cursory view of the Museum.'[629] This introductory statement is evident in subsequent editions of the *Synopsis* and, though the exact wording differs across editions, certainly the recommendation that the scope of the work was intended to appeal to a general museum-goer rather than a naturalist or scholar remained the same in all.

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[627] McOuat, p. 24 also notes Gray's influence in developing the system of cataloguing employed in the ''Vellum Catalogue''; however he locates his account within the wider context of the development of scientific naming rather than looking at the interrelationship between the various catalogues, how Gray's new directive was employed in a practical sense or that the introduction of his new method aids in dating sections of the 'Old Catalogue'.

[628] British Museum Parliamentary Select Committee, *1836 Report*, paragraph 2496, p. 195.

[629] British Museum, *Synopsis of the Contents of the British Museum*, 11th edn (London: Richard and Arthur Taylor, 1817).

The 1835 Select Committee were keen to draw attention to potential inaccuracies and omissions in the work in the *Synopsis*, asking Konig directly

whether the Synopsis, as it now stands is such a work as ought to proceed from an institution like that of the British Museum?

Konig – I have frequently expressed my sentiments to that effect to several of my colleagues; the subject requires a different treatment; the synopsis is not a popular work, nor is it strictly a scientific work; it is an odd mixture of the two.[630]

Although Konig argues somewhat ineffectually that 'formerly it was much worse, as you will find by referring to the older editions,' the Select Committee suggested that the officers of the Museum meet together to revise the *Synopsis*.[631] This appears to have provoked a response since in December 1835, John Children wrote a report entitled 'On the Method of Improving the Synopsis' where he argued that it was impossible to develop a *Synopsis* that would meet the needs of both the 'general visitor' and 'scientific student'.[632] He proposed that they issue two publications one which, like the *Synopsis*, provided 'a general reference to the contents of the several rooms' and the second 'a systematic catalogue' which provided a much more detailed account of each specimen including its order, family, genera and species, in addition to providing information on location and donor. It was to this end that he directed Adam White to put together the catalogues of British birds as an example of how this might look. It seems that, in addition to responding to the need for catalogues, the 'Vellum Catalogues' were also compiled with the intention of their being published as a scholarly alternative to the much criticised *Synopsis*. As was considered earlier, even at its inception there was a question over how the needs of the general and more specialist interest groups might be accommodated by the *Synopsis*; the thought being initially to print two versions. This indicates a further important aspect of the Museum collection, namely its audiences and how responding to their competing and potentially irreconcilable demands proved problematic.

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[630] British Museum Parliamentary Select Committee, *1835 Report*, paragraph 2928, p. 207.
[631] See British Museum Parliamentary Select Committee, *1835 Report*, paragraph 2908, p. 206 and paragraph 2940, p. 208 respectively.
[632] NHM, Report Book, 12 December 1835, pp. 1-4.

It is clear that the museum which the Royal Society objects entered in 1781 was a place whose documentation systems were severely lacking. The emphasis initially was on creating handbooks or guides, both to aid the attending officers when guiding visitors around the Museum and to provide information to the Trustees during their annual visit. However, noting donor information was superfluous to this type of recordkeeping. Although the handbooks were adapted and printed for the Museum's visitors as the *Synopsis of the Contents of the British Museum*, this publication did not satisfy the need for scientific rigour or the expectations that general and scientific audiences alike held regarding the repository of the national collection. Consequently, systematic catalogues were periodically attempted, and were most successfully realised in the 'Vellum Catalogue' series, upon which example the published volumes of the Museum's collection in the 1840s are likely to have been based. However progress was slow, inhibited not only by the state of the collections, and the difficulty in naming specimens, but also by the repeated moves to new rooms in the early part of the nineteenth century. Furthermore, the lack of detailed information systems prior to the 'Vellum Catalogues'' composition, plus the lack of and damage to labels, meant that very few of the older specimens' donors, particularly the pre-nineteenth-century items, could be identified.

Although it is likely that John Gray was the driving force behind the style, composition and success of the 'Vellum Catalogues', the Select Committee also appear to have played a part in requiring that all incoming specimens ought to be registered, emphasising the need for systematic catalogues and directing that such catalogues should be printed. Arguably, the most important of the committee's recommendations was the introduction of a registration system, which required that every specimen entering the Museum space be individually documented, chronologically in departmental registers.[633] The information recorded included the date the item was purchased or presented to the Museum, its donor or vendor, the specimen's genus and in many cases also its species. Most significant however was that the accessions register provided every specimen with a unique numerical identifier that unlike catalogue numbers, which can change as collections are reordered, or as new catalogues are produced, remained unchanged and exclusively

[633] House of Commons, paper 516, p. 2.

associated with the particular item. Using these numbers meant that objects could be reunited with their provenance information very easily. Had this happened in 1781 rather than in 1836, tracing the repository's objects would have formed a very different story. Still the catalogues and registers had the desired effect and donations made by the Royal Society to the British Museum from their transit of Venus expeditions in the latter part of the nineteenth century are still extant and their Royal Society connections, thanks to the Museum's documentation systems, remain identifiable to this day.

- CONCLUSION -

Notwithstanding the myriad problems that the Royal Society experienced in building and maintaining their collection of natural and artificial objects, this study has sought to demonstrate that, at least periodically during the repository's life, it consisted of a substantial collection which, by the time that it was transferred to the British Museum, consisted of at least 6000 items and was particularly strong in bird and mammal skins from the Americas, insect specimens and in dried plants cultivated in Britain. The repository was also comprised of a significant collection, which was employed for various purposes throughout its stay at the Royal Society. In the years before 1700, a small number of items donated to the repository provided the chance for opportunity- or object-led experimentation. However, in most cases, the repository's specimens did not feature in the Society's experimental practices as these tended to be more concept- or experiment-led and for which items would be procured specifically for the purpose of testing.

The general decline in the Society's experimental activities from the beginning of the eighteenth century also appears to be reflected in the use of the repository's collection. In fact, it was the location of the repository and the space it afforded which proved useful to the Society's eighteenth-century experimental practices. During the 1730s and 1740s, the repository functioned as a site within which experiments, particularly those concerning electricity, would be performed in front of Fellows and visiting dignitaries. Still, it appears that, for the most part, the repository acted as a vast filing cabinet of specimens which was drawn upon by Fellows of the Society and naturalists in general. For instance, items would be requisitioned from the repository during the Society's weekly meetings to supplement their discussions. Furthermore, before 1730 and after 1769, material from the Society's collection featured as exemplar specimens in numerous naturalists' work, including Walter Charleton's *Onomasticon zoicon*, Richard Bradley's *Philosophical Account of the Works of Nature* and Thomas Pennant's *Arctic Zoology*, *Synopsis of Quadrupeds* and *History of Quadrupeds*. In addition, specimens also participated in studies of comparative anatomy, particularly the Society's collection of fossil teeth and bone. However the application of the specimens in species identification was inevitably flawed because a

number of the fossils had been misidentified, and remained so until their transfer to the British Museum.

The repository also possessed a collection that the British Museum was initially grateful to receive. However, the death of Daniel Solander so soon after the repository's transfer, in addition to the problems the British Museum experienced in preserving their specimens in the late eighteenth and early nineteenth centuries means that few of the Royal Society's non-botanical specimens have survived to the present day. Moreover, the reorientation in the Museum's exhibition practices, which sought to show sensitivity to the perceived sentiments of its expanding audiences, led to parts of the Society's collection becoming increasingly marginal to the concerns of the Museum. As a result, these were sold to the Royal College of Surgeons, in all likelihood to be used as part of their handling and dissection collection. For those non-botanical objects that may have survived, the lack of a paper trail prevents conclusive identification of all but a small number of specimens as originating from the Royal Society. Interestingly, the Royal Society's botanical collection fared much better and many of its former plant specimens, specifically those donated by the Chelsea Physic Garden, remain extant and can still be identified as having Royal Society associations.

Further to this study's argument regarding the significance and substance of the collection, the mutually defining relationship between text and objects also becomes apparent. The Society was keen, particularly before 1700, to retain or obtain the object upon which a written account or observation of a natural phenomenon was based, or at the very least, a simulacrum of it to be stored in the repository. This seems to be because the text was viewed as lacking something without the object as eyewitness to verify its findings. However, the object too lacked something without the extra explanatory information communicated via some form of text which identified and contained it. Text was essential to provide information on the circumstances of the object's discovery, the date it was given to the Society and who it was donated by. Notwithstanding this, although the circumstances and location of the find were of scientific importance to the Society, the name of the donor was only significant insofar as retaining donor information was perceived to encourage further benefactions. This view is also apparent in the early years of the British Museum. Unlike Robert Hubert's collection, who prized objects for their curious provenance

and colourful donors, for the Society, the physical qualities of the specimen and the knowledge it produced were of central concern. As a result, the loss of donor information does not appear to have been much lamented, if at all, at the Royal Society. When the specimens entered the British Museum, identifying and naming specimens, in addition to providing guides to the Museum's rooms and cases took priority over putting together measures that might enable the Museum to retain donor information in relation to particular specimens. By the time the question of donor information arose at the beginning of the 1830s, too much time had elapsed to reunite all but the most distinctive specimens with the details of their benefactor.

Not only was text important in documenting specimens, but also in mediating a visitor's engagement with a collection by serving to silence previous associations that might confuse the narrative the current owner wished to convey. Robert Hubert, for example, was effectively effaced from the collection that he sold to the Royal Society. Daniel Colwall's role in purchasing the objects was stressed initially and developed into the suggestion that he donated the collection which deemphasised the role played by Hubert and the problematic narrative that his objects were associated with, specifically their previous membership of a cabinet of curiosity where awe, wonder and strangeness were key. In addition, Grew's catalogue sought to appropriate Hubert's former specimens into the scientific discourses of the Society. This also occurs in a slightly different way at the British Museum. Leach renamed numerous specimens according to his own system and included these names on the object labels and in the catalogues. Both examples seem to demonstrate how owners or keepers of collections attempt to exert their authority over objects using text; in the case of the Royal Society, scientific authority over a formerly non-scientific cabinet, whilst for Leach, renaming the specimens in his care at the British Museum to establish his authority as a naturalist. The irony is that, in general, the literature intended to contain and communicate both the Society's objects and the specimens described in Leach's 'Old Catalogue' have outlasted the objects themselves.

Notwithstanding the importance that the early Royal Society placed on obtaining the object upon which an account was generated, once received, it became largely subordinate to the textual account that contained and disseminated the information gleaned from the item, in a similar way to the fact that once a written

account was copied into the Society's official records or was published in *Philosophical Transactions*, the official or printed copy became the primary way in which the data was engaged with. The object, like the original letter, became part of a raft of information technologies which authenticated the official written or printed account. This priority of text over object is also evident in further ways in the Royal Society and the British Museum. In both institutions for example, books appear to have taken priority over objects. During the repository's life, the committees assigned the task of building and maintaining the Society's library met more frequently than that of the repository and generally the book collections fared much better than their counterparts in the repository. In addition, the Society's library catalogues were more regularly produced and updated in comparison with those of the repository. This was not isolated to the Royal Society; catalogues of the British Museum's book collections appear to have taken precedence over cataloguing their natural history specimens. Moreover, although it was not necessarily a straight choice between keeping the library or the repository, when lack of space led to the repository's omission from William Chambers's plans, it seems of all the rooms the Society wanted to feature in their new accommodation, the repository was deemed the one to be surplus to requirements.

For the British Museum, which specialised in material culture and for the Royal Society, who claimed objects were a central part of their work, it is interesting that both institutions made text rather than objects their priority. Still, for the British Museum, the priority of cataloguing books before objects and for the Royal Society given the choice, keeping a library rather than a repository is probably for very practical reasons. It is much easier to identify, place and catalogue books in addition to their being much easier to maintain. Furthermore, for all the agents associated with both institutions, though particularly at the Royal Society, there was perhaps a more easy familiarity with how to accumulate, catalogue and maintain a collection of books than one of objects. As is evidenced in the various reports by the Royal Society's repository committees, they could diagnose the problems with the repository, but their suggested remedies were speculative at best. Notwithstanding the precedent set by cabinets of curiosity, maintaining a collection of objects over a long time period was still a relatively new and untried pursuit. For those Fellows involved with the repository, maintaining a collection of the size and, perhaps crucially, diversity of the

collection was relatively new territory and so inevitably mistakes would be made along the way, unfortunately at the expense of the objects.

These mistakes and the repository's life cycle more generally appear to be mirrored by the British Museum. First of all, both began their lives assuring would-be benefactors that objects would be preserved. The repository stated that items would be preserved 'for after-ages', whilst the British Museum viewed itself as 'a safe and lasting repository' and each emphasised that items donated would be used to further knowledge. In addition, both witnessed a fairly rapid decline in the condition of their objects within forty years of their foundation. From 1700, the repository began to encounter difficulties and received negative appraisals of its collections from visitors. Similarly, in around 1800, forty years after opening its doors to the public, the British Museum began to encounter problems with respect to the condition of its objects. The collection was much maligned by contemporary commentators, most notably some years later in the 1823 *Edinburgh Review* article, which has been discussed as part of this study.

Following these problems in preserving the condition of their objects, both institutions experienced difficulties in attracting large volumes of specimens and were arguably overlooked by would-be donors in favour of other collections. For example, the British Museum found that some specimens collected by the Admiralty were sent to the Zoological Society rather than being given to the national collection. Strangely, after a little under seventy years, both institutions took measures to improve the state of their collections. The repository committee of 1729 to 1734 began to refurbish the repository, whilst in 1825 John Gray spearheaded a different cataloguing system in the British Museum's zoological department and plans were made to reorganise the collection, display items that were formerly in storage and more fully document the collections. For the latter, the process of improvement took more than fifteen years and required the added impetus of the Parliamentary Select Committee's report to rectify their collection. Unfortunately, for the Royal Society, after the repository committee's efforts, the collection once again fell into decline and although it recovered in the 1770s, this was only a brief respite prior to its incorporation into the British Museum.

Why the British Museum, as an institution which supposedly specialised in material culture initially faltered in similar ways to the Royal Society is difficult to say. Given the crossover of personnel between the British Museum and the Royal Society, one would have thought that the Museum's keepers would have been aware of the problems the repository encountered and try not to make the same mistakes. However the fact that both collections were institutional, rather than personal ones might explain this and so perhaps agents associated with each of the collections did not feel 'ownership' of their charge in the way they would their own. Also, perhaps expertise of a collection can only grow with experience, not just of the individuals working for an institution, but also the institution itself, whose measures to anticipate problems and implement countermeasures to ensure that things do not go awry takes time and a little learning from bitter experience to develop.

Although the British Museum did not recognise quickly enough that the problems they encountered were much like those experienced by the Royal Society, the repository seems to represent, albeit in an embryonic form, the beginning of our modern conception of what a museum should be. Unlike the cabinets of curiosity that preceded it, the repository was not a collection intended for self aggrandisement, and though there is truth in the idea that the collection acted as the public face of the Society and a question mark over the usefulness of the miscellany of objects it accumulated, its stated purpose was for the storage, development and creation of knowledge. As such, the collection should be viewed as providing a case study of early museological practices and their development through the late seventeenth and eighteenth centuries. The Society recognised fairly quickly the importance of pro-actively accumulating objects in addition to cataloguing, preserving, and later conserving the items in their possession. However the methods they employed often failed and were reliant on the expertise, interest and enthusiasm of the members available. For instance, whilst Oldenburg and Hooke were Fellows of the Society, the accumulation and use of the collection were high on the agenda. However, when Oldenburg ceased being secretary of the Society, their correspondence networks, which also attracted the benefaction of numerous objects faltered. Similarly, the repository appears to have been used less as Hooke grew older and frailer.

Moreover, Sloane's expert example of collections preservation and management also proved pivotal in reviving the repository in the 1730s, but once this task had been completed, again things began to fall apart, this time probably because Sloane was diverted to other tasks and there were insufficient qualified or interested personnel to help augment and maintain the collection. This is also likely to result from a shift in scientific trends during the period and, like modern museums, the repository acted as a cultural barometer reflecting the shifting interests and agendas of its personnel and wider scientific and popular culture, in addition to pioneering them. Once natural history and taxonomy became key towards the end of the eighteenth century, this was similarly reflected in the accumulation and use of the collection. Intellectual fashion also played a role in the survival of the Society's collection once at the British Museum when it was viewed as outdated and archaic and was disposed of. The repository sowed the seeds not only of museological practices for enlightenment and post-enlightenment museums, but also reflects the way in which institutional collections of material culture are perhaps inevitably influenced, and can be marginalised, by the enthusiasm and interest of their personnel, popular culture and intellectual trends.

That the Royal Society experienced many problems in the conservation, administration and accumulation of objects in its repository during its ownership of the collection is not in doubt. These seem to be symptomatic of the repository being an institutional collection which lacked the concentrated effort that an individual collector might exert in constantly assessing, improving and building their collection. Ultimately the repository was largely managed by a diverse range of enthusiastic amateurs rather than collections specialists. Those who were specialists, such as Sir Hans Sloane, are likely to have prioritised their own collections over that of the Society. The Royal Society was not a specialist institution for collections of material culture and so inevitably the needs of the repository would be assessed and weighed against the raft of projects that the Society were engaged in. Whilst this ambivalence should not be mistaken for deliberate neglect, insignificance or unimportance, it was nonetheless damaging both to the repository's objects and to its reputation more generally and reflects the uneasy relationship or dialogue within the history of early modern science between empirical evidence and emerging theory. However, whilst the repository stood between these two areas of intellectual endeavour and suffered in

consequence, its role in the ongoing attempt to reconcile evidence and theory should not be underestimated, and neither should the repository itself.

- LIST OF APPENDICES -

Appendix 1: Royal Society Archives

Transcriptions of selected reports made by the repository's committees regarding its collections and its condition and discussions regarding its omission from architect Sir William Chambers's plans.

'Report of the Committee for Examining the State of the Repository of the Royal Society', Original Council Minute Book, vol. 3, 2 November 1731, pp. 98-9

Since our former Report, we have proceeded to enquire unto the state of the several bodies contained in the Repository, in the same manner in which we began: and have now finished our Examination. We find the Whole in a very bad condition, many of the Bodies being quite missing and most of those which remain much decayed many of them also being of so trifling a nature as to deserve no regard. The Instruments & models of engines are generally so broken to pieces, that few of them are worth preserving.

We have taken care to preserve such natural bodies and Instruments as we find in any tolerable condition and to make provision for such as may hereafter be given to the Society. We have had the Repository supported & new flored. Lived with deal and painted. We have caused several Cases to be made with Glass Doors that the several Bodies contained in them may be seen, without being handled; the want of which caution we apprehend has been in a great measure the occasion of the ill state of the Repository. We have employed skilful persons to clean such as we thought deserved that care and were in a condition to be preserved by it: as shells skeletons, and bones of animals corals & coralloides, keratophyta, star stones & Brain stones.

[p. 99] We have affixed numbers to such Bodies, as we have examined, which being compared with our minutes, may lead more readily to the knowledge of them: and to such as were unknown we have added a mark expressing a doubt.

To the end that the Repository may be kept in a better condition for the Future we apprehend that it will be necessary that such parts of animals, as are capable of it, should be varnished, that draughts should be taken in miniature of such animals either at present or hereafter in the Repository, as are either ill or not at all described, that the petrified woods should be pollished in a proper manner, and draughts and descriptions taken of the models.

We propose that some proper persons be desired to inspect the Journal Books of the Society, and extract a Catalogue of such things as have hitherto been given.

We are of opinion that it will be necessary to refer each division of the Repository to some one person, who may be desired to put the same into a just order, and make a catalogue of the bodies contained in it.

'Report of the Committee Appointed to Inspect and Examine the State of the Repository of the Royal Society', Original Council Minute Book, vol. 3, 18 February 1734, pp. 134-40

The Committee pursuant to an order of the Council, renew'd their meetings in the Repository on the 5th of march last; when it is scarcely to be express'd the confusion and disorder they found every thing in: the greater part of what was expected to be there being lost or imbezzled, and most of what remained in such bad condition, either thro' want of care, or injury of time, and finding no perfect Catalogue to examine them by, that it was difficult to determine in what method to proceed.

The committee therefore, as the most regular way they could think of, desired Dr Mortimer to draw out a methodical List or Catalogue of all the Curiosities, from the lists of the Donations extracted from the Journal books and Dr Grews printed catalogue: in which he followed the [p. 135] methods used by the best writers of natural History.

Assisted by this they proceeded in their examination, took account of, and number'd what they could find of

The Human Curiosities	to No.	52
Quadrupeds & serpents	to	162
Birds, Eggs, Nests &c	to	66
Fishes	to	94
Shells	to	176
Insects	to	42
Vegetables	to	231
Fossil shells and vegetables and fossil bodies resembling such	to	71
Earths and sands	to	72
Stones	to	128
Precious stones, Crystals Salts Bitumens	to	84
Ores	to	343
Chemical Preparations	to	18

Artificial curiosities they have not yet completed their examination of

The committee make no doubt it will appear surprising, that so small a number of articles should have engaged their attention thus long. But this wonder will cease, when the extreme bad condition they were in is considered: many things scarce to be known what they were, and others, for want of a perfect Catalogue and numbers answering thereto, not to be distinguished from some of the same genus.

[p. 136] It is with concern they observed the human Curiosities extend to so small a number and even these in a very bad condition: the dry preparations much broken decay'd: the skeletons (of which there are but two) ready to fall to pieces; the mummy, by having been always kept in a erect position, almost destroyed, but which they ordered to be repaired and placed horizontally in a Glass-case: The systems of the human veins, arteries and nerves, contain'd in four tables, in a very bad condition, which they have likewise ordered to be clean'd up repair'd put into new frames, and to be hung up against the wainscot; by which means it is hoped they will be preserved from future injuries.

The Quadrpeds, Serpents, Birds, Eggs, and Fishes, the major part quite decay'd, and many scarce fit to be preserved: which they have therefore thrown aside for another review not esteeming themselves duly authorised to deny them a place in the Repository.

The insects broken to pieces, so that with difficulty they found forty two capable of being replaced.

The fossils, which are less liable to injury, are in a better condition: yet many specimens of ores &c, by being confounded together are not to be distinguished what they are. But the Committee are surprised to find so many curious specimens of oriental and other precious stones [p. 137] in the lists of Donations, not to be found in the Repository, notwithstanding their most diligent search.

The committee finding the Repository in this very wretched condition, proceeded to take into consideration, by what means this has happened, and how to prevent it for the future.

The most obvious causes seem to be, the want of proper means to keep things dry, and convenient places to keep them free from dust, and lock them up in.

In order to keep them dry, the Committee have considered of various Expedients, but have not yet been able to determine which to choose.

One is, to make four windows in the back front of the Repository, which in good weather being opened will let in a sufficient current of air to keep the things dry, and will also add light to that side of the house, which is much wanted.

Another is, to make the two oval lights in the roof to open, and, if need be, to make four more in the same manner.

A third, that as the Damps abound in the winter season, to build another Chimney in the house and to have constantly a fire in both.

But as all these designs are experiments they refer them to farther consideration: only add, that as they are informed there never is a fire in the Repository but on the days of meeting; they are of [p. 138] opinion, that if a fire be directed to be kept in, every day during the winter season, and, if need be, a copper pan with charcoal or small coal in the middle of the house and the door is shut for the heat to ascend, all this inconvenience will be removed.

The next is, the want of convenient places to keep them free from dust, and lock them up in.

For this the Committee propose to have cabinets at the two ends, and between the windows of the Gallery, and on the west end of the Room below after the same model of those already with Locks to the sashes and Drawers. But as this is likewise very expensive, tho' absolutely necessary, they have yet ordered only tow to be erected in the Gallery: and in these they have already begun to place the human curiosities, Quadrapeds, Serpents and Birds.

It may be thought extraordinary, that as the Curiosities in the Repository are so few in number, the Committee should be so desirous of having so many new Cabinets to place them in.

It is certain, that what is proposed will be much more than necessary to contain the present Collection: but their design is to dispose what there is in such order and method, that when the Society shall hereafter be favoured with any Donation of these kinds, they may easily find room in their proper places, without [p.139] the trouble of removing a whole Class; and that the Donor may be satisfied that there will be proper care taken hereafter to preserve them in good condition. The Collection of the Royal Society hath formerly made a considerable figure and tho' at present it is so much reduced, they hope by their care in recovering and preserving what is left to incite the curious part of the world to be as generous to it as they have formerly been. There are many ingenious anatomists Fellows of the Royal Society, who, the Committee hope, will be by these means encouraged to enlarge the Cabinet of human Curiosities with some of their excellent preparations. Some Gentleman curious in their enquiries into Nature be engaged to supply such curiosities, which formerly had place in the Repository, but are now entirely perished. Others may be induced to deposite their Collections here, as a sure mean of rendering them usefull to the Publick: and will have the satisfaction to know that what they have collected with so much industry and expence, will here remain safe and entire.

And in order to convince such Gentleman of the truth of the intentions of the Society, the Committee take leave to propose the following method.

First, that all such things as are capable of being put into Glass-Cabinets or Drawers [p. 140] shall be there placed, and always kept locked up.

2dly, that such things, which are estimated for their intrinsick value, such as Medals, precious stones &c, be never shewn to anyone but in the presence of the person to whom the charge is committed, or in his absence in the presence of a Fellow of the Society.

3dly, that there be an exact methodical Catalogue made of all the things at present in the Repository, written fair, with proper vacancies for adding all future Donations in their due places: and that the several particulars be number'd correspondent thereto.

4ly, that when a number of things shall hereafter be presented to the society by any one person, they shall be all immediately enter'd in the Catalogue, and put in their due places, according to the method observed in the same, and number'd agreeable thereto.

5ly, that a Book be kept containing the Donors names, together with an account of the particulars of each Donation, and the class and number, where each is reposited.

6ly, that a particular Committee of five, seven or more Fellows be appointed once a year, to inspect the Repository; who shall see that all subsequent Donations are duely enter'd and call over every particular in the whole Repository, to see that none are missing: at which Committee any Fellow, not p.141 appointed by name, may, if he

pleases, attend. And this (if every thing is once duely placed) may be done with very great care and dispatch.

The Committee farther observe, that the Repository is always a common passage or thorough fair to the family dwelling in the Society's house, and which is indeed a very great conveniency to that family, but is, they think, not quite so proper for the Repository to be thus exposed. They are therefore of opinion, that if some passage could be contrived under the Repository to the back street; it would be much better, and would answer the uses of the family

'Report of the Inspectors of the Repository of the Royal Society', Original Journal Book, vol. 25, 17 November 1763, p. 146-50.

During the last recess of this Royal Society, the inspectors of your repository have employed two whole afternoons in every week almost constantly in the said Repository; and have proceeded at such times with all the care and diligence in their power, to examine, to note down, to clean, and to place in order, the several curious matters, contained therein. And they were so unhappy as to find no catalogue, or any paper, that could afford them the least assistance.

As method is necessary in all business to prevent confusion, they resolved at their first meeting, to begin their inspection at the farthest corner [p. 147] of the upper part of the Repository and proceed progressively through the whole. And notwithstanding everything was covered in dust and filth, they deemed it best to take out, and examine and note down the several matters before them, in the same condition and order they were found. And whatever was so taken out, examined and noted at one meeting, they ordered to be well cleaned, and put in its place, against they should meet again: and this was constantly performed by the keeper of your Repository.

In this manner your Inspectors have examined almost all the subjects of natural history in your Repository, whether animal, vegetable or mineral; and have taken an hasty account of the same, which they rather chuse to call an Inventory than a catalogue of natural History: but from which a scientific catalogue may very easily be formed, when the whole comes to be reconsidered, and the subjects therein mentioned, are arranged in proper classes. But had your Inspectors undertaken to do this at first, they could not possibly in the time have done one quarter of the business they have now gone through. [p. 148] The above mentioned Inventory, or rough Catalogue, your Inspectors now lay before you, as a proof of their attention to your expectations from them.

Mathematical, mechanical, or other Instruments; and all curiosities of art, which may be in the Repository, your Inspectors have not yet had time to consider; but shall meet as often as opportunity serves, and proceed, until they have gone through the whole.
In the course of their examination your Inspectors have found many specimens of animals and vegetables totally decayed and perished; and such they have thought proper to turn out of your Repository, not only as useless and disgraceful, but even as pernicious. For on moving the animal bodies so decayed, and in a state of putrefaction, the air in the room became intolerably foetid, and they were all sick.

But notwithstanding such multitudes of specimens have been destroyed by time and dirt; and that many more (as your Inspectors believe) missing from other causes: they have the satisfaction to inform this Royal Society, that there still remains a very valuable collection of the subjects of [p. 149] natural history. There are still many good specimens of animals (amongst which are several rare fishes) and of the skeletons and parts of animals.

There are some good shells, and many curious corals. The insects are very few, time having destroyed them. Fruits, woods, gums and other vegetable productions there are many of. The ores, minerals, crystals, spars, stones and extraneous fossils, would make of themselves a fine and large collection. And your Inspectors have the pleasure to let you know that they have found several valuable gold and silver ores, which were supposed to be lost, and they cannot forebear to mention, that the jaspers and other stones from Siberia are extremely beautiful and singular.

As all the above mentioned matters are now cleaned, and so placed as to make an handsom appearance and to be seen with ease; tho not yet classed so regularly as they will be hereafter: it is hoped that Gentlemen will be encouraged to add as much as they are able to this collection; when they are assured, that for the future, they shall be duely attended to, and preserved with all possible care. And as the bringing together [p. 150] and arranging the various subjects, mentioned in the Inventory now laid before you, under their several classes, forming a scientific catalogue there from; and putting a mark upon every specimen corresponding to such catalogue, whereby it may always and easily be found, will require much time, knowledge and attention, and must be the work of some one person, who can have them all constantly under his eye, and can occasionally apply to the minute books of the Royal Society, for any necessary information concerning the same: your Inspectors humbly recommend this work to be performed under their direction, by the keeper of your repository, Mr Emmanuel Mendes da Costa.

And lastly your Inspectors would be wanting in point of justice, should they omit to inform this Royal Society with how much readiness and assiduity, the said keeper of your Repository has constantly at all their meetings attended on them, and executed their orders punctually.

Henry Baker
J Parsons

‘Second Report of the Inspectors of the Repository of the Royal Society’, Original Journal Book, vol. 26, 21 November 1765, pp. 307-11

In the year 1763, the Inspectors of your Repository applied themselves with great assiduity, during the whole time of the Royal Society’s recess, to clean, examine, and take account of all the curious matters and things lodged in your said Repository: And having made a compleat Inventory of all the subjects of Natural History therein found, whether animal, vegetable or mineral, and arranged the whole in such decent order as might do credit to [p. 308] the Society they had the Honour to deliver in the said Inventory with a report of their proceedings and of the then state of your musaeum; to which report (which was read to the Society) your inspectors must beg leave to refer.

In the year 1764 your Inspectors were prevented by the necessary repairs of your House then carrying on from proceeding as they intended to examine and make a further inventory of all the curiosities in your Repository. But this last summer, having set apart two days every week for that purpose during the vacation of the Society, they have been able to take exact account of all the machines models, instruments of several kinds, weapons of war, dresses, utensils, remains of antiquity, works of art, and other matters which belong to the Royal Society, and have now the honour to deliver herewith a written inventory thereof: which, with their former inventory of natural history, will furnish a compleat account of the whole collection at present in your Repository.

By these two inventories you will know what treasures you are possessed of, you will know (which you have not done for many years) what is under the care of your Repository keeper, and what he is accountable for: the want of which your Inspectors apprehend has occasioned the loss of numberless things [p. 309] of value – your whole collection is now clean, and disposed in such a manner as to make an handsome appearance, and every article enquired after can be found with ease.

This is all could hitherto be done: but there still remains to draw up from these inventories a scientific catalogue, with a brief description of each article where necessary according to the manner of Dr Grew, and to mark and arrange the collection according to such catalogue – This indeed must be a work of much time and attention, must be done by some person, who can at pleasure have all the subjects under his eye, is well acquainted with natural history, and can apply on occasion to the minutes of the Society – your inspectors are of the opinion, that few are so capable of doing this as the present keeper of your Repository. A collection like yours, enriched with so many curiosities both natural and artificial, when kept clean and properly methodized, will do honour to yourselves and to your countrey: as Foreigners will view it with pleasure and speak of it with applause. In drawing up this last inventory, which comprehends all your machines, models, mathematical, optical and other instruments, your Inspectors were at a loss to know what purposes some of them were intended for, as no description was found with them, nor any reference to the minutes when they were presented, and therefore were obliged to leave the uses of them undetermined, till the minutes of many years [p. 310] can be over looked. – The like difficulty as to other matters has also frequently occurred: Wherefore the want of precision as to some things they hope will be excused.

Nothing can be more easy than for the future to keep your repository in good order, to prevent confusion, and to place whatever shall be brought in hereafter under its proper class. You have now a compleat account of what you are possessed of at this time, and your Inspectors take the liberty to recommend that the keeper of your Repository be directed, to enter from time to time, in a book to be provided for that only purpose, every treatise, every specimen of nature's production, and every work of art shall be presented to this Royal Society; setting forth the person by whom, with the day and year when presented. – If this be done your future Inspectors can never be at loss where to enter and how to describe all additions to your collection, and you will always know where to find them in your minutes. Such a regulation will undoubtedly likewise prove an inducement to persons who are possessed either of natural or artificial productions, to present and lodge them in your Repository, where they will

be preserved, for the Improvement of knowledge, and the Donors names be recorded with Honour to Posterity, as Benefactors to the Royal Society and to the Public.

[p. 311] After finishing the Inventory of artificial matters now delivered in, your Inspectors took the pains to call over again, and examine one by one all the articles of natural history contained in their former Inventory, and to dispose them more properly than could at first be done: this has taken up a great deal both of their time and their attention, but it was a revisal that seemed to them quite necessary.

It would be great injustice to Mr da Costa, keeper of your Repository, should this Society not be informed that during the whole vacation he has attended constantly on your Inspectors, and executed their orders with the utmost diligence: and indeed taking down, cleaning, and placing properly so many articles, covered with the Dirt of many years has been no little trouble.

'Report of the Committee appointed to preserve and arrange the natural productions lately presented by the Hudson's Bay Committee to the Royal Society', Original Journal Book, vol. 27, 26 March 1772, pp. 598-602

The Committee thought it material to lose no time in the business intrusted to them and there fore gave immediate directions that the animals should be placed in their proper attitudes before they might be liable to injury from insects when the spring advances.

The have accordingly employed Mr William Torose for this purpose; who hath given sufficient proofs of his skill in stuffing animals for other valuable collections and who we hope will appear to have done justice to those we have put into his hands. It must be considered however, that many of the specimens were so much dried and contracted, that they could not afterwards distended to the size of the living animal, nor could the plumage of the birds be so well adjusted, as in the fresher specimens.

We have considered it as our duty to name all the animals by referring to the naturalist who hath described with the greatest accuracy; and have also taken notice of any defection such descriptions, which have occurred upon examining the specimens.

Some of the animals are non-descripts, in which case we have annexed a short a Latin description; and in this (as well as in all other things relative to our charge) we think ourselves indebted to Mr John Reinhold Forster FRS who hath constantly attended the comtee and hath taken great paines in settling the catalogue according to the references transmitted from Hudson's Bay.

We have also found some of the animals in this collection to be precisely the same with those in Great [p. 599] Britain, and others to differ only minutely; in both which cases we have thought it right to state their agreeing in every circumstance or in what particulars they may differ.

A small part of this valuable collection consisted of fossils; of the more interesting part of which we have subjoined a short catalogue, and do not find that they afford hopes of any considerable mines; but this most probably may arise from the

Company's officers having not attended to the fossils of Hudson's Bay so much as to the animals of that part of America.

We have received also two plants which Mr Forster hath made some experiments upon; the event of which hath already been communicated to the Royal Society.

We cannot conclude our report without expressing that we are truly sensible of the value of the collection, which the Hudson's Bay Company have presented to the Society; and as the Governor and Directors have been so obliging as to intimate, that they will from year to year endeavour to procure new specimens; we would more request the fish insects and plants of this remote part of America. We have also directed catalogues to be made of what we have already received, which we mean to send to the different forts in order to prevent both the expence and trouble of duplicates.

Some duplicates were indeed found in the present collection, and in all such instances (after reserving [p. 600] the best specimens for the Museum of the Royal Society we have given the second to the British Museum; and if more, to Fellow of the Society who were making collections and desired to have them.

From the great use not only to the study of Natural History, but also perhaps to commerce and manufactures, from what hath been presented to the Royal Society by the Hudson's Bay Company, we cannot but wish that application was made from the Royal Society to the Directors of the East India, Turkey, Russia and African companies, for the same sort of collections to be transmitted annually; and as less is known with regard to the natural productions of S. America, Mexico and California; than of most other parts of the globe; we cannot likewise but recommend, that the same applications may be made to his excellency Prince Masserano Embassador from the Catholic Majesty and FRS, as also to the Earl of Hillsborough FRS for nay natural productions which may be wanted from our Colonies. To these we may likewise add our wishes, that application be made to the Count de Burzinski Minister from the Polish Majesty; The Marquis de Pombale secretary of state to His most Faithful Majesty; and Count Peter Czernicheiv (who are all Fellows of the Royal Society) for the natural productions of their respective countries and Colonies.

We have the satisfaction also to state, that the Earl of Sandwich hath been pleased to intimate that he will direct such productions to be sent from the [p. 601] Falkland Islands; and that we have great reason to expect the same sort of collection from Mr Samuel Tessier Kuckuhn, who is at present a candidate for becoming a foreign member of the Royal Society, and means soon to visit the Musqueto shore.

In case the Royal Society should think it proper to make such requests to the different companies and persons above mentioned, the Committee (if permitted to continue) will consider it as their duty to point out the desiderata from each country, and would at the same time transmit directions how the natural productions should be preserved.
We also have the satisfaction to be able to state from the expence which it hath attended the <u>setting up</u> and preserving the present valuable collection from Hudson's Bay, that if we are furnished with specimens form other parts of the world, we could equally arrange and preserve them, without incurring such charge as might be inconvenient to the finances of the Society;

And we conceive that a collection might thus be gradually formed of natural productions, which might be worthy the Museum of the Royal Society, and perhaps become a national honour.

As the committee hath constantly met in the Society's Museum, it could not but strike them, that the natural productions which are therein at present deposited, stand in much need of being newly arranged and better preserved. We cannot therefore but recommend, that a new scientific catalogue be made of the whole [p. 602] collection; and that the Inspectors of the Museum would state to the Society what further requisites may seem proper for the more effectual discharge of the trust reposed in them by the Society.

Signed Sam Wegg, Daine Barrington, W. Watson, Marmaduke Tunstall, Gustavuus Brander, Wm Hudson, Wm Watson Junr.

'Report of the Committee appointed to preserve and dispose of the Natural Productions Presented to the Museum', Original Journal Book, vol. 28, 21 January 1773, pp. 52- 4

In the examination, the Committee hath proceeded as they did the year before; by naming each animal according to the Naturalist who hath appeared to give the best description of it; and where the conceive the Animal to be a non-descript, they have marked it accordingly.

We take occasion however here to observe, that the proportional number of such non-descript is much greater (as might be expected) in the valuable collection of birds from Falkland Island, presented to the Society by Philip Stephens [p. 53] which we have likewise examined.

In all instances where there were duplicates we have reserved the best specimens for the Museum of the Royal Society and the next best for the British Museum; in such instances where the number of specimens were more than two, we have presented them to such members of the Royal Society as were desirous of them for their collections.

In the setting up the animals we have (in the absence of Mr Towse) employed Mr Green of Lomonds Pond Southwark with whom we have had great reason hitherto to be thoroughly satisfied.

As the Governor and Directors of the Hudson's Bay Company were so obliging as to transmit a catalogue of the specimens, in which the natural history of each animal is stated, we have ordered a copy of such catalogue to be made, as we conceive the contents to be well deserving the notice of the Society.

As we had occasion to examine the specimens of a fish mentioned in Grew's catalogue of the Museum of the Royal Society, we cannot but state the great difficulty in finding it, from the disorder in which the collection is at present.

As the Inspectors however have intimated that they will endeavour to arrange the specimens; and as we have great reason to expect considerable numbers of animals both from North and South America [p. 54] in consequence of the favourable Letters received both from the Earl of Dartmouth and his excellence Prince Massarano, we think we may without impropriety apply for some additional convenience and improvements in the Museum.

We do not conceive that the expence will be very considerable, but we hope, that in order to defray it such part of the surpluss of the of the Transit money may be applied to these alterations, as will not be wanted for more material purposes.

We cannot conclude our report without recommending as we did in our last, that applications may be made to different companies and persons therein mentioned, for the natural productions of most parts of the Globe; and we cannot but flatter ourselves that we shall receive as favourable answers as the Society hath already had from the Earl of Dartmouth and his excellence Prince Marsanno, upon making the same request.

'Report of the Committee of Natural History', Original Council Minute Book, vol. 6, 20 January 1774, pp. 205

The Committee of Natural History having examined the valuable collection lately transmitted to the Society from Hudson's Bay, hath proceded to name and dispose the Specimens which the Society hath received from the Cape of Good Hope, amongst which they have the satisfaction to find many non-descripts: The Committee hath also used all possible endeavours to recover what was destined for the Society by Mr Forster are not absolutely without hopes of being able to procure the remained from the warehouses of the East India Company.

Though the Committee however observe, that the Societys Museum is already furnished with many natural productions of great value from foreign parts, they cannot but wish that a collection was formed for illustrating the Natural History of Great Britain, as the specimens not being transmitted from any considerable distance would not only be an additional ornament to the Museum but contribute greatly to the more accurate knowledge of natural history.

The committee conceived that charge of making such a collection will not be considerable they will not however presume to incur such expence without the approbation of the Council Daines Barrington, Marmaduke Tustall, Wm Hudson, Saml Wegg

Excerpts from the Royal Society's Original Council Minute Book regarding the omission of the repository from Sir William Chambers's plans for the Society's new accommodation at Somerset House

Original Council Minute Book, vol. 6, 9 May 1776, pp. 291-2

Sir William Chambers having laid before the Council the plans of the apartments intended for the Royal Society at Somerset House, the Council took the said plans into consideration.

[p. 292] It appeared that in the entrance of the intended House, there was no safe and convenient footway clear of the carriages.

That it would be very inconvenient to have any of the apartments intended for the Royal and Antiquarian Societies, or the stair case leading to them, or the lodging rooms of their Offices, in common.

That the room intended for the Society's Library is much too small to contain their Books.

That according to the Plan, no room is allotted for the Society's Museum.

That a room upon the ground floor will be absolutely necessary for transacting some of the business of the Society, also a parlour for the private use of the Librarians

Original Council Minute Book, vol. 6, 10 May 1776, pp. 292-3

Resolved that the following letter be sent to Sir William Chambers.

After mature consideration of the plans you had the goodness to lay before us, of the apartments intended for the Royal Society at Somerset House; we beg leave in the first place to return you our thanks for your [p. 293] attention to the accommodation of the Society; and there to offer to you the following remarks.

We think it will be a great inconvenience to have any of the apartments intended for the Royal and Antiquarian Societies, or the stair cases leading to them, or to the Lodging rooms of any of their Offices, in common.

The Room intended for the Society's Library is much too small to contain their books. There is no room at all allowed to the Society's Museum.

No room is given them on the ground floor: One will be necessary for transacting some of the business of the Society, and another for the use of the House-keeper.

We have likewise to observe with respect to the approach to the intended apartments, that there is no safe and convenient foot way clear of carriages.

We would wish to have it considered, that the allotment of Publick apartments to the Royal Society, will be understood by all Europe, as meant to confer on them an external splendour, in some measure proportioned to the consideration in which they have been held for more than a century

Original Council Minute Book, vol. 6, 18 May 1776, pp. 294-6

The president communicated to the Council a Letter from Sir William Chamberlain in answer to the Letter sent him of the 10th instant of which the following is a copy

May 16 1776 In answer to the letter which I had the honour of receiving the 10th inst. I am to acquaint you, that no more space can be possibly be given to the Royal Society, in the intended new buildings at Somerset House; consistent with the general plan, than that which has been already allotted: neither is it practicable to contrive any entrance, hall, principal stair or anteroom, suitable to the splendour of the Royal Society, but such as shall be common to the Antiquarian Society likewise; in all the other apartments of the two [p. 295] Societies there may be an entire separation; and I am particularly happy in being authorised to do whatever can be done, within the space allotted for the better accommodation of the Royal Society.

In consequence of this permission, I beg leave to observe that if the room intended for the Library be found too small, the space for books may be very considerably augmented by dividing the room into two, one of which might occasionally serve as the Council room, as being of a proper size, and more conveniently situated, than the first designed in the attick.

No room on the ground floor can be contrived, without reducing the Hall almost to nothing, and consequently spoiling the approach to the meeting room; but to obtain the rooms wanted, one for some business of the Society, the other for the house keeper, a mezzanine may be introduced over the hall, without detriment to their interior decoration; in which they might be placed.

These rooms with two others in the Attick, where the council room was first intended, with garrets over them, and the accommodations in the cellar storys would it is apprehended, be quite sufficient for housekeepers in general; what farther may be necessary in Mr Robertson's particular situation, I do not pretend to determine.

In such case there would remain a room in the attick floor for the Museum 42 feet long 26 feet broad, which by comprehending the attick and Garret floors, might be made 17ft high.

[p. 296] With regard to the foot way to the Royal Society, it will be perfectly safe and commodious, as only the center arch is intended for carriages, and the pavement of the side arches will be smooth and raised above the rest considerably.
I am under a necessity of acquainting you that a speedy determination will be necessary with regard to the points in suspence, as nothing now is wanting but your answer to carry the Works into immediate execution. From Wm Chambers.

The Question being put that this business be referred to the Society at large; it passed in the negative.

The Question being put that the Society accept of the apartments intended for them at Somerset House, it passed in the affirmative

Appendix 2: British Library Archives

Papers Relating to the British Museum, BM Add 6179, fols 30^{r}-31^{r}

A Scheme for requesting the Benefactions made to the British Museum, and preserving the memory of the Benefactors, humbly offered to the consideration of the Committee.

Among the many and great advantages, which must necessarily accrue to the public from the establishment of the British Museum, this may justly be esteemed not the least considerable; that it provided a safe and lasting repository for curiosities of every kind, whether of art or nature, accessible to all persons in their researches into any parts of useful knowledge. The want of this has been hitherto much lamented, not only by learned men as a great impediment to the progress of science; but likewise by many possessed of such curiosities, who have been often at a loss, how and where to reposite them for the benefit of posterity. But as both these inconveniences are now redressed by this Museum, the good effects of which appear already, by several valuable gifts lately made to it; the following scheme is proposed, both for preserving the memory of those Benefactors, and incouraging others to an imitation of such laudable examples.

1. That a Book be provided, in which each Benefaction may be separately entered, and properly described; with the name of the Benefactor, and the time when it was given.

2. That the entries above mentioned be all transcribed from the Book of Benefactions into the respective catalogues of the Museum, under the classes to which they relate; with the letter B for Benefaction, and the page of the book, added to the end of each article. By this means it will readily be known, which of those things, as they stand together in the Museum [fol 30^{v}] were Benefactions, and by whom given without affixing labels to them, as is the custom in some places abroad.

3. That where a Benefaction consists of a large number of things of the same or a like sort, it be sufficient to describe them together in one article mentioning only the number in the Book of Benefactions; but in the catalogue of the Museum relating to that class, each of them should be separately specified, with the letter B and the page subjoined, as mentioned above. Thus in the gift of Pitt Lethieullier Esquire, among other articles, there are fifty three glasses containing the bodies of various animals preserved in spirits, which may be entered together, as one article, in the Book of Benefactions but in the Catalogue of the Museum these should be all particularly mentioned, and the several animals described. The like may be said of coins and some other things, which will be best judged of, as occasion may offer.

4. That the Book designed for this purpose be of a large folio size, consisting of vellum, or white parchment (which is much cheaper, but often very greasy) strongly bound in Russia leather with thin brass plates at the corners; and either with, or without clasps. Each skin of vellum or parchment, will make two leaves, so that fifty skins will give two hundred pages; which if not

thought sufficient, yet as these materials will make the Book heavy, it may not be proper to have it very thick.

5. As our design of this Book is to satisfy the public of the care which is taken both for the preservations of the Benefactions, and memory of [fol 31r] the Donors; it seems highly probable, that it will frequently be consulted by persons of different situations in life, who may be desirous to inform themselves with regard to both those particulars. For which reason it may perhaps be most convenient that the entries in this Book be always made in the English language, when the nature of the subject will admit of it; tho in the catalogue of the Museum they may be expressed in the same language with the other articles of that class, in which they are placed.

6. A draft of the Book here proposed, as to its size, form, and title, accompanies this paper; to which I beg leave to refer.

Laid before the Committee March 12, 1756.

Appendix 3: British Museum Archives

Transcription of Report made in 1809 which determined to sell numerous specimens to the Royal College of Surgeons.

'A Report Concerning the more Valuable Parts of the Collections Deposited in the Base Story of the British Museum', Original Papers, 27 February 1809, fols. 905^{r}-908^{v}

In obedience to the request of the Standing Committee of the Trustees of the British Museum, I have at last found myself able to examine & report upon the nature of the multifarious matters which have from time to time been deposited in the Basement Story by successive Officers of the House, in consequence of their having been deemd either unworthy of a place in the Apartments above, or improper to be exhibited to the Companies that attended. I was prevented till now from entering on this business by a fit of Gout which seizd me a few days only I after I received the commands of the Trustees, by the necessity of spending the Autumn in the Country & by a second fit of the Gout soon after my return to London, from which I am now only beginning to recover.

I found the deposit multifarious indeed, but among the various articles it consists of, few if any which in my judgement are deserving of a place in the great Collection, there are however some things of considerable value [fol. 905^{v}] in other points of view.

The most interesting articles are those which have been removd from the Apartments above on account of their being unpleasant to the view, or in some way disgusting to the generality of Mankind; the Officers of the house have from its first institution considerd the shew part of the Museum as a Collection of matters not only curious & instructive, but agreeable also to the Visitors, and consequently likely to lead them by the paths of amusement to information & instruction, and no doubt in some cases to the development of talents and the application of Genius, to pursuits advantageous to the progress of Science & the enlargement of the sphere of human knowledge.

Among these are the following articles which form indeed a very considerable part of the whole Mass; as I mean to submit to the Committee my opinion of a method of disposing of these advantageous both to the interests of the Public and to the credit of the Trustees. I shall begin with enumerating them; it will be easy if these are taken away, to dipose of the remainder in a short time and to clear the Apartments of all the Rubbish & Lumber [fol. 906^{r}] which is at present an obstacle to their more usefull & advantageous occupation.

<u>Osteological Collection</u>
consisting of human bones many of them extremely interesting from the diseases of which they are examples, also many Bones of Animals & some sceletons both human & comparative.

<u>Monsters preservd in Spirits</u>

of these there are many both Human & Brute, which never ought on any account to be exposd to public view lest the fancies of pregnant females might attribute to them the blemishes & misconformations of their future offspring.

Calculi human & brute
a collection from which no amusement can be derivd & little instruction – unless they are submitted to chemical analysis.

Anatomical Paintings Preparations & Injections
matters admirably suited to assist the Lessons of Teachers in Anatomy but in no other point of view advantageous to the Public.

Egyptian & Teneriffe Mummies
are damaged parts of the Collections of these matters which is exhibited above stairs & are clearly of no use to the Collection.

[fol. 906^{v}] Birds & other Animals in Spirits
these consist of such Specimens as are, from the length of time they have remaind in the Collection & possibly from a failure of renewing the spirits as they wasted by evaporation, no longer in a condition to be so prepared as to become a part of the Collection of stuffed Animals; on this subject it is further submitted, that the whole of what is calld the Spirit Collection above stairs is regarded by the Visitors rather as an object of disgust than of curiosity, the room where they are kept must unavoidably smell strongly of spirits & the Snakes Fishes &c in the Bottles, are very frequently designated by the opprobrious appellation of hobgoblins.

A considerable Collection of the Horns of various Animals
it may be a doubt whether this Collection should be parted with, Natural Historians make use of the horns of Animals in distinguishing their species & it sometimes happens that Horns are the only proof we have of the existence of an Animal, as is the case of the Arnee of the interior of Bengal in this Collection, it is however submitted that if it is judged expedient to retain them, some means should be found of exhibiting them as parts of the Collection, which was done not many [fol. 907^{r}] years ago, by fixing them on the cornices of the rooms where objects of natural history are exhibited.

That there are in the Basement story many articles of value and importance, the above enumeration fully proves, but if the Trustees agree in opinion with the successive Officers of the house, that a Museum for Exhibition ought to be a Collection framd for the purpose of administering instruction in the form of amusement & thus endeavouring to awake latent curiosity, they will agree also in thinking, that nothing ought to be exhibited there likely to create disgust or even repugnance, if these positions are admitted, it follows as a consequence that the Officers who withdrew these articles from Public Exhibition judgd well, & that the Trustees will act properly, by disposing of them in some manner more likely to tend to public advantage, than suffering them to decay & be consumd in the damp apartments where they are deposited.

At the time when these Collections were removd from the Apartments above, there was no institution in being, to which they could be transferred with advantage to the

Public; that difficulty is now removd, the munificence of the [fol. 907^{v}] Legislature has most judiciously purchased the late Mr John Hunter's Anatomical & Physiological Collections, provided an ample depository for their safe custody, & confided the care of the whole to the Royal College of Surgeons, on condition that Lectures are annually read there for the advancement of medical knowledge, & the illustration of human & comparative anatomy.

To this Collection the articles enumerated above except perhaps the Horns appear naturally to belong, & it is submitted, that it is almost a duty incumbent on the Trustees of the British Museum who are in fact the Trustees of the Public, to transfer these things from an establishment on which they are an evident burthen, to one where they will be of eminent utility, in promoting the best purposes for which it was originally endowd, that of furnishing Public Lectures for the advancement of Medical knowledge, in a City where from the abundance of Hospitals, Clinical experience is more easily obtaind than perhaps in any other, & where of course Lectures on Anatomy & Physiology cannot fail to be productive of the most advantageous consequences.

The Osteological Collections & the Preparations which afford examples of uncommon diseases [fol. 908^{r}] will evidently be of the utmost importance to the intended Lectures; The Monsters also are highly interesting to Anatomists, much has already been discovered & more will hereafter be learnd by studying the arrangement of the parts of these aberrations of Nature; Calculi cannot in the Hunterian collection be too numerous as the improving state of Chemistry has renderd it necessary to submit these substances twice within a few years to analysis & as it will no doubt be necessary to repeat chemical experiments upon them, as often as new principles are developed by the sagacity of future operators.

The Anatomical Paintings will in the Hunterian collection serve as illustrative ornaments, which here they are wholly useless; The spirit collections, (as the Muscles, Blood Vessels & Bones of the animals preservd are always in their places, & in many cases the intestinal canal has not been removd,) will furnish an abundant source of research in comparative anatomy to the Surgeons, while here their use is chiefly confind to the researches of the Naturalist whose interest in their external structure, will not be diminshd by the anatomical examination of the internal: we have many [fol. 908^{v}] applications for leave to examine these specimens by dissection, & some discoveries of importance have been the fruit of the liberality of the Trustees in granting this permission, how much more likely are these Collections to prove usefull, if the whole are opend to the researches of the able comparative Anatomists who are now the ornaments of their own profession here free from all interruption difficulty or delay.

Much more might be added on this subject in proof of the propriety of endowing the Hunterian Collection with articles useless to the British Museum & infinitely interesting to that hopefull institution, but I trust little if any thing of argument can be adducd on the opposite side, I shall therefore close this Report, least I should trespass too much on the valuable time of my Bretheren, & leaving to their wisdom & discretion the whole of the arrangements – necessary for the completion of the business, subscribe myself.

Appendix 4: Royal College of Surgeons Archives

William Clift's notes on the purchase of objects from the British Museum

William Clift, 'Memoranda concerning the old and duplicate specimens of Natural History and Anatomical Articles by the Trustees of the British Museum to the Royal College of Surgeons in London in the year 1809', MS0007/1/2/2/11, fol. 3[r]-11[r]

[Fol. 3[r]]

May 1835

Memorandum concerning the Sale of Old and Duplicate Specimens of Natural History, and Anatomical Articles, by the British Museum to the Royal College of Surgeons, in the year 1809.

In the year 1809 in consequence of several store rooms in the souterraine of the British Museum being wanted for the deposit of Books, as I was told, it became desirable that a large accumulation of old, Duplicate, and long neglected, and refuse specimens of Natural History, together with all the old broken, mutilated, spoiling and spoiled anatomical preparations, skeletons, & bones, which had been from time to time rejected from the museum upstairs, or had never been in that state of preparation as to render them fit for public exhibition – were offered to the College of Surgeons through the medium of Sir Everard (then Mr Home) by & no with no doubt Sir Joseph Banks, no doubt with the consent & concurrence of the other Trustees of the British museum, who were also Trustees of the Hunterian Collection; and who were desirous in order to gain the room they occupied & get rid of them that these specimens should be transferred to the College of Surgeons as the situation where, if they had any value, they might be useful as store specimens for dissection, & reference for the purposes of illustrating the Lectures stipulated by the Government to be delivered and then about to be at the College; and prevent as much as possible the necessity of examining & thereby injuring or altering the Hunterian preparations, which were in good preservation.

As it appeared that the Trustees of the British Museum could not transfer these old specimens to the college as a Gift, but only by Sale, it was proposed and agreed to by both parties that they should be examined and appraised by a sworn appraiser, the buyer and seller to pay half [fol. 3[v]] of the expence of the appraisement: and Messrs King and Lochee of King Street Covent Garden were approved of and employed, as the fittest persons to put a value on them, having been many years chiefly engaged in selling objects of Natural History, and who had in 1806 sold that immense collection the Leverian Museum (a 36 or 38 days' sale) of a precisely similar description of articles; and consequently were considered as eminently qualified to estimate the value of such assemblage of objects as the present

It may be observed here that there could be no reason to doubt the fairness of the valuation, as Messrs King & Lochee were paid a percentage for their trouble, and consequently the higher they had valued the articles the greater would have been their remuneration but I believe they were both very honourable able & conscientious men:- The intrinsic value of the purchase lay principally in the quantity of useful stopped-bottles: - the others were of very bad shape, without a foot, and generally of inferior material.

From this valuation the appraiser was directed to exclude the intire collection of Horns suspended round some of the rooms which were numerous & valuable; and for the same reason, the picture of the woman with a horn growing form the side of her scalp was retained; together with various old samples of gums resins and other articles of Materia Medica: and some few that by mistake (through the excess of dirt were hidden from sight) were, when washed & discovered, returned to the British Museum.

I accompanied Mr Lochee several days to the British Museum to make myself acquainted with the nature of the specimens to be valued, & transferred; and all such objects were pointed out to us by Mr Planta, Dr Gray, and Dr Shaw; but chiefly the latter gentleman, in whose department & under whose key they were: who particularly pointed out the horns, the old cabinets &c &c that were not to be included in the appraisement.

Dr Gray was very desirous of retaining the Urinary and intestinal concretions, as these gave no trouble in their preservation and these were arranged or rather ranged in Cabinets between the windows up-stairs.

[Fol. 5^{r}] And afterwards, when this was over-ruled (by, I believe a representation by Sir Everard to Sir Joseph Banks, & by him to the other Trustees) and the concretions were given up to the College – One specimen (Mr Hay's Calculus) contained in a gold box with the history written on Vellum, was retained for some years, and at length was brought by Mr Planta to the college, and resigned in a very grudging manner, on account of the gold box. (Brought by Mr Planta, Feb 26 1814)

It may be remarked that all the smaller specimens were packed in rough deal boxes with rope handles taken from the College for the purpose of safety of carriage, and that no packing box or boxes whatever, or specimens in packing-boxes were delivered to us or specimens in or from packing boxes or taken by us from the British Museum, as I have been given to understand that is has been asserted by some anonymous person. The boxes seen by this or any other person were those previously belonging to the College and had been made in 1806, for the purpose of removing the Hunterian Collection from Castle Street Leicester Square to Lincoln's Inn Fields. Dr Shaw refused even to the loan of some drawers in which some were contained for the safety of their removal.

Some large boxes containing skins and skulls that had been consigned to Mr Bullock from Ld Wm Somerset and Ts Sheridan from the Cape of Good Hope were brought direct from the Waggon Office in the Borough to the College and the contents divided between the College & Mr Bullock but though Mr Bullock had to pay a considerable sum for the specimens, the skins were so improperly prepared, and so eaten by mice & cockroaches as to be nearly worthless, being chiefly dressed skins without heads or feet. The college paid the freight & carriage in return for the skulls. May 6 1816 from the Waggon Office Ship Inn Boro Carrion £1:5.11 and Check for £12 0.0

The whole of the specimens thus pointed out and selected and delivered to us by Dr Shaw and his assistants, I packed and removed at several times, or journeys, in a caravan to Lincoln's Inn Fields, (excepting two or three large skulls of whales which are still at the British Museum, as we had not then room to receive them, nor have we

even now; although they were included in the valuation) and the specimens so removed were warehoused for a considerable time in the room intended for the College Library

A very large number of the specimens of snakes and objects of that kind were contained in French-Olive bottles and pickle bottles with corks and resin only – and many of these had become quite dry, shrivelled & utterly spoiled, and were the first to be selected and thrown away.

No list of the specimens as to number or kind was ever made or attempted: they were too numerous and worthless for that Labour.

Snakes, fishes, frogs, without cuticle or colour, and in a miserable state we received in great numbers. By far the greater part were duplicates of what we previously had in a good state of preservation in Mr Hunter's Collection; and therefore these old and comparatively worthless specimens were [fol 5^{v}] were considered by us at the college only as a useful store of spare specimens to cut up and dissect for the purpose of the Museum lectures and Sir Everard Home's numerous inquiries preparatory to delivering those Lectures &c, so as to preserve Mr Hunter's Collection, in that particular, from alteration or injury, by examination to decide any doubtful point

Many of the specimens which we received from the Brit Mus particularly those in very long stoppered glass Bottles, were probably part of those that had been presented to the British Museum (I believe) by Sir Joseph Banks in the year 1792, at which time Sir Joseph Banks divided his collection between that institution and Mr Hunter's; previous to which they occupied apartments under and at the end of his Library; which apartments were wanted for the use of his own increasing Library. – It was one of my first employments with Dr Hunter, to assist in the removal of these specimens from Dean Street Soho to Castle Street Leicester Square, and afterwards in separating and putting up in new spirit such of these long neglected specimens as were not spoiled. The specimens which now form what Dr Shaw afterwards (when he made a catalogue of them for the college) denominated the "New Holland Division", were always kept separate from Mr Hunter's previous collection of Natural History in spirit, (and called by Dr Shaw "The General Zoology") and were placed in New Cases made by Mr Weatherall on purpose for them, and occupied the east end of the door of the museum previously occupied by the calculi cases and were all marked "JB" in compliment to the Donor & to distinguish them from the others being precisely similar in kind & equality of Bottles, &c to those in Mr Hunter's possession given to him by Sir Jos. Banks.

The reception of this extensive donation from Sir Joseph occasioned great alterations in the whole economy of the museum and House. The calculi-cases were divided in the middle, & placed one half on each side of the vestibule or entrance to the museum floor, which 'till then had been occupied by the fossil cubes: and Mr Hunter at considerable expence removed the workroom from the first floor to the second, and removed a partition between the front & back room of the first-floor & fitted them up for the reception of the fossils, corals &c in order to give up one intire room of the museum to Sir Joseph's donation. [fol. 7^{r}] In this way many of the specimens received from the British Museum were consequently duplicates of those which were given to Mr Hunter in 1792, and were of course of still less value, as they had been further

neglected during the intervening years in the Souterraine of the British Museum, in addition to the bad state of many of them at the time they were received from Sir Joseph.

Those specimens had apparently been neglected by Sir Joseph Banks from the time of the death of Dr Solander, if not from the time of his return to England, about the year 1775 when cold water was thrown on his proposal to make a second voyage of discovery; for which he had made considerable and extensive preparations

To return to the subject of the Specimens purchased by the College from the BM – They consisted of an immense assemblage accumulation of bottles from the quarter of an ounce phial, to the gallon stopper-bottle – the square green glass pickle-bottle and the olive-bottle;- bottles of every shape and degree of thickness and thinness from almost the origin of glass blowing: - some simply corked, some rosined, some tied over with bladder and painted; some red; some green, and all other colours: - and had apparently been accumulating from the time of Dr Hooke to the time of Dr Shaw's predecessor – for no one ever suspected the latter gentleman of tying over a bottle with a putrid bladder – some apparently from the earliest period of preserving animals or objects in Spirit of Wine.

Many human foetuses, natural & of various periods of Gestation; some monsters; - many monster kittens & puppies, foetal calves, and mice out of number. – Common English snakes and vipers, by the score, in one bottle in a bad & decorticated state: - a few fishes, and many reptiles birds & quadrapeds.

Among the Dry Specimens were some that were formerly among the "Rarities at Gresham College" and described by Nehmiah Grew: - viz. Four tabs shewing the arteries veins & nervous system prepared at Padua by Fabricius Bartoletus – purchased & presented by John Evelyn Esq FRS – a wreathed Elephant tusk – Part of the skeleton of a very large crocodile; - &c &c

A very large number both of wet & dry specimens had labels on them that had become perfectly illegible by time, damp, and dirt: - and mnay without. Many had certainly belonged to Sir Hans Sloane's collection: - others probably presented from time to time – and others that had been presented to Sir Joseph Banks in 1792 with illegible labels chiefly: (as were those he had given to Mr Hunter.)

When the college library became converted into a examination-room, all the bottles were obliged to be removed into our own dark and damp souterraine, where a considerable number still remain and [fol. 7^{v}] without doubt not improved. Many others had labels with numbers, & some with descriptions, stuck in the hollow of the bottoms of the bottle. Many of these afterwards came off and otherwise suffered damp.

Of the dry specimens, a great many had labels with numbers on them which I many years afterwards (20 or more) found described in Hans Sloane's MS Catalogues; of which catalogues I could gain no satisfactory intelligence until 1831. On the reception of the specimens from the British Museum and observing numbers on many of them, I mentioned the circumstance to Sir Joseph Banks, being desirous of learning whatever history might belong to them, but Sir Joseph assured me that he believed it would be

an useless inquiry, as he knew nothing of any catalogues belonging to or referring to them. – I afterwards recollected having many years previously seen a figure or figures of singular urinary calculi in Rymsdyk's Museum Britannicum; and on consulting that work I found a synopsis of the general contents of the museum, and an account of the number of catalogues in folio and quarto belonging to Sir Hans Sloane's collection, and the number of articles described in each series. In 1831 being about to prepare a catalogue of the Urinary and other concretions now in the museum of the college (the British Museum specimens included) I made an application to the Trustees and had permission to require a search to be made, and luckily succeeded in tracing the above mentioned catalogues which contained a great deal of useful information concerning many of the specimens; and of which I made a transcript during that winter (a large pile of Catalogues, in a long closet outside of the Long Gallery now occupied by the Cases of minerals. -) 4to. & Folio) and particularly of the Calculi, of which the labels were best preserved, having been kept dry on the first floor of the museum.

Among the specimens pointed out to us by Dr Shaw & included in Mr Lochee's valuation, and delivered to us, were some dried specimens sent by the Emperor of Russia to Sir Joseph Banks (about the year 1803 or 4 or about that period) in return for a sketch or Drawing I made at the desire of Sir Joseph Banks, of Mr Peale's skeleton of the American mammoth which had been exhibited during the Peace of 1802, in Pall Mall, as the Russians were desirous of comparing it with their Siberian Mammoth (Elephas Primogenius) as I believe until that period no skeleton of the animal had been in existence, and consequently no figure of it. In return there were sent to Sir Joseph about a dozen specimens of Natural History, with a list of them, I think in Latin or English: among which were a fossil Rhinoceros' skull from Siberia; - a long & flat decomposing (or hairy state) horn of a Rhinoceros from ditto: - I think the recent skull & horns of an Ovis ammon; - and I recollect it was stated, there was a skull of the Siberian mammoth – This list was delivered to me by Dr Shaw or his assistant, with the other things, but as the specimens were not labelled or marked, I could never be certain, whether we had them all or not as they were mixed with multitudes of other things – and particularly that said to be the skull of the mammoth from its confused resemblance to the elephant.

In 1814 when the Emperor Alexander [fol. 9^{r}] visited this country & was expected to visit the British Museum, Sir Joseph Banks recollected these specimens, and made inquiry at the British Museum about them; and as I believe Dr Shaw was then dead, Mr Konig came to inquire if we had them; and at the special request of Sir Joseph all these that we could find in our keeping were with the List, returned to the British Museum by the College though no skull of the mammoth could be detected by Mr Konig or myself on the examination of all the specimens which the college received.

There were also included in the purchase, as we were to have everything anatomical, two very fine and large elephants' skulls that had been sent from India as a present to the British Museum about the year 1796 or 7 by John Corse, Esq. (now John Corse Scott,) One, the Dauntelah or large-tusked elephant; the other the mooknah or small & straight-tusked variety. – These skulls had imitative porphyry pedestals & stood in the hall of the Brit: Mus: Many years afterwards (1820?) although Mr Corse had seen and admired them in Lincoln's Inn Fields, as on account of their large size we had given them the place of honour over the centre cases of the gallery, and our own specimens trending off to the smallest; Mr Corse took it into his head to lay a formal complaint

before the Trustees of the BM of their having parted with his donation: and then came another application from the Brit Museum to the College to have these skulls also restored; and they were restored; But in consideration that these restorations constituted the most striking & really valuable part of the purchase, (the bottles constituting the principal value of the remainder) the Trustees of the B: Mus: considered it just to return half of the £175 purchase money which I had paid into the hands of Joseph Planta, Esq. in 1809. I do not know to whom the moiety of the purchase money was repaid, but of course the minutes of the Board of Curators, & of the Trustees of the BM will show that [fol. 9^{v}] among the numerous examples of animals and parts of animals preserved in bottles were some skins of Birds in a dried state but not stuffed. A great proportion particularly of the larger Birds &c collected by Sir Joseph Banks and now in the Hunterian Museum in spirit are the skins or pells with the head & feet only: the bodies with the visera had been "either eaten or thrown away as Sir Joseph used to jocosely remark, as they would have required more spirit than they could afford, and also to experiment on to discover what might be available as food either fresh or salted." I have tasted Hippopotamus, Elephant, Whale, Tortoise & many other things with Sir Joseph, by way of experiment that are not usually eaten and some considerable time viz 4 years while they were on the shelves or walls of the floor of the Museum Mr Bullock happening to see these specimens was desirous of obtaining them to render his then public & popular collection more complete. As Mr Bullock had frequently very liberally and gratuitously sent us the carcases & viscera of animals that he had procured for his museum, or that had died in his possession; on his expressing to Sir Everard Home a wish to have a few of these skins of Birds which he had not in his collection and as it was never contemplated by the College to stuff any of these skins, had they been altogether fit & in proper condition; - On the representation of Sir Everard Home to the Board of Curators on the 5th & 19th of February 1813. See Minutes of Bd of Curators. Mr Bullock was allowed to have I believe not exceeding six or eight if so many, of these old and badly preserved skins, several fell to pieces on our removing them from the bottles, and others were destroyed by moths and other insects, from being originally insufficiently prepared. In return Mr Bullock gave us some few fossil bones of the Irish Elk, American Elephant and Mastadon &c &c from time to time, as opportunities offered; and the heads and feet of probably some of these identical birds with many donated from his own duplicate and spoiled Bird skins to illustrate our Lectures.

Some years after this occurrence, I was told by Sir Everard Home that some ill-natured comments had appeared in an Edinburgh Review or Journal on the subject of this Transaction blaming in the first instance the people of the British Museum [fol. 11^{r}] for parting with these valuables, and secondly the College of Surgeons for not duly appreciating them when in their possession: - but though this was, I think, Anonymous, I learned from inquiry that is was supposed to be the production of a person who had been disappointed in his wish of succeeding to some appointment in the Natural History department in the Brit: Mus: but I never heard the name of the suspected person, nor read the paragraph in question. I think also that Mr Henry Grey Bennett alluded to this subject in the House of Commons while intitled to sit there.

On the sale of Mr Bullocks Museum in 1819, I think I heard that in consequence of these remarks in the Edinburgh Review some or all of the Bird Skins alluded to had been repurchased for the British Museum by Dr Leach, or Mr Konig. They both occasionally attended the sale for the purchase of specimens in their several

departments and without doubt the Banksian Parrots if wanted and worth having, would naturally be purchased; & as Mr Bullock made no reservation, but sold everything in a very liberal manner without dwelling on the Lots, as other auctioneers usually do (and as he himself did when he afterwards sold the property of other people) I have no doubt that all the Birds in question might have been purchased for two or three pounds: but I have no priced catalogue, not having attended the sale regularly.

NB Mr Bullock purchased largely for his Liverpool Museum at the sale of the Leverian Museum in 1806; which collection possessed hundreds of specimens brought by Captain Cook, & others, from the South Seas, - & probably some from Sir Joseph Banks who was liberal enough to give to everyone who deserved & to some who did not.

In Mr Bullock's Sale Catalogue 14th Days Sale May 21st 1819 I think six specimens of the Genus Psittacus are described as having been brought to this country by Sir Joseph Banks; but whether the whole of these, as is possible, were those before-mentioned as obtained from the British Museum, is not absolutely certain, notwithstanding; - because Sir Joseph Banks was on the most friendly terms with Mr Bullock, and patronized and encouraged him on various occasions and made him presents of specimens for his museum, as must be well known to many persons who recollect it contents; or will refer to his octavo catalogue.

14th day

Lot 19	"Horned Parakeet brought by Sir Joseph Banks from the South Sea - very rare"
32	"Undescribed Parrot, brought by Sir Joseph Banks."
33	"Ditto this & the last are not known in any collection."
42	"Undescribed; from the South Sea, brought by Sir J Banks."
77	"Banksian, P. Banksi."
114	"Southern Parrots, (male & female) P. Nestor, very fine, & extremely rare; Brought by Sir Joseph Banks from the South Seas"
115	"Ditto (male)"

Wm Clift May 1835

Appendix 5: Natural History Museum, Tring, Archives.

Sample pages from British and non-British Bird volumes of the 'Vellum Catalogues' and from the 'Old Catalogue'.

'Vellum Catalogues': British Birds, Volume 1, fol 25r

			25
	x	a ♂ Caermarthen	Mus Montagu
		b ♀ Devonshire	Mus Leach fores[ted] by Sir W[m] Ellford Bar[t]
	x	c ♀ Carmarthen	Mus Montagu
	Strix Aluco Temm		
		d Wiltshire "a	Mus Montagu
	x	variety" Leach	
		e chick	Mus Bullock
	Syrnium Aluco Leach		
	_____ stridulum Leach		
	and also Strix stridula of Leach syst cat p11		
	Syrnium aluco Jenyns p93 Both		
	Tawny owl Montagu Jenyns		
	Wood Screech owl Leach		
	Screech owl Leach u sup		

Fol 34r

			34
		a. England	W[m] B. Spence esq
	Turdus Cinclus Linn	b. "	"
	Cinclus aquaticus Bechst	c. ♀ Monmouth	Mus. Montagu
		d. ♂ Caermarthern	Mus. Montagu
	Cinclus Europaeus. Leach		
	syst cat p 20. (1816)		
	Water Ouzel Lath Montagu		
	European Dipper Selby		
	Eur. Water Ouzel Leach us		

Fol 67[r]

			67
	Alauda pratensis Linn	a. ♂ Wiltshire	Mus. Montagu
		b. ♀ "	Mus. Montagu
		c. var Surrey	Mus. Leach Mr Leadbeater
	Anthus pratensis Bechstein	d. Var London market	Mus. Leach
		e.	
	Spipola pratensis Leach syst c p.21 (a+b) " agrestis Leach p.22 ? (e)		
	Meadow Pipit Selby Titlark Lath Montagu Tit pipit (a+b) & Field Pipit Leach (e?)		

'Vellum Catalogues': Non-British Birds, Volume 5, fol. 6[r]

6			
	Cathartes	a. Egypt	
	Vultur percnopterus, Linn Viell.	b. Africa	
	Percnopterus Ægyptiacus, Cuv Step	c. India	Hardwicke's Bequest Purch[d]. Laugiers
37.6.10:627:	(Vultur Ginginianus, Daud.)	d. Arles	Ditto
37.6.10:442:		e. ditto	Ditto
37.6.10:414:		f. France	
x	Alpine Vulture, Lath. Gingi Vulture, Lath.		

Volume 12, fol 25[r]

199	a Turdus perspicax, Shaw nat. Misc. 18 Turdus explorator, Viell 1823 Petrocincla explorator, h. Spying Rock-Thrush Rocar Thrush, var. A. Lath. L'Espionner, Levail.	Cape	Hardw. Beq:

Fol 67[r]

241	a b Turdus a Ciniclosum a Ianthocincla of Gould Crateropus of Swains	Himalayan	Mr Gould Hardw: Beq:

'Old Catalogue', fol 1[r]

No		Country	Presented by
1.	Vultur Papa Linn. Syst. Nat. 1.122.3. Gmel. Syst. Nat. Lath. Ind. Orn. King of the Vultures Edwards gl. Tab. 2 King Vulture Lath. Gen. Syn. 1.1.7. Shaw. Gen. Zool. 7.1.39. Le Roi des Vautours Buff. Ois 1.169.6.	America	
2.	Vultur Californianus. Shaw Viv. Natur. Tom. 9. Tab. 301. Californian Vulture. Shaw. Gen. zool. Vol. 7. p.1. pag. 10.	California	A. Menzies Esq[r]

Fol 1^{v}

		Country	Presented by
3.	Falco Leucocephalus. Linn. Syst. Nat. 1.124.3. Gmel. Syst. Nat. Lath. Ind. ornithol. L'Aigle a tête blanche. Brisson orn. 1.422.2. Le Pygargue. Buff. oiseaux 1.99. Bald Eagle. Catesby Carolin 1.1. Lath. Gen. Syn. 1. p.1 pag. 29, sp. 3. Aquilla Pygargus Viell. Haliætus leucocephalus nol. (not Vigors)	America	J. St John
4.			

Fol 2^{r}

		Country	Presented by
5.	Falco Milvus. Linn. Syst. Nat. 1.126.12. Gmel. Syst. Nat. Latham Ind. ornithol. 1. Kite or Gead Will. Orn. 74.t.6. Kite. Lath. Gen. Syn. 1.61.43. Penn. Brit. Zool. 1.53. Bewick Brit. Birds Vol. 1.1. Montagu ornithol. dict. Le Milan royal Buff. ois. 1.197.t.7. Milvus regalis. Briss. orn 1.414. Milvus Ictinus. Savig. Ois. de L'Egpt. et de la Syr. 88.1.		

Fol 167[v]

334.	Cygnus Canadensis Shaw XXII.2.19 Anas Canadensis Linn Syst Nat. 1 198 Gmel Syst Nat 1. 574 Lath Index 2.838.	a. N. America b. ------	

Fol 168[r]

335.	Bir Col n 1 Falco Islandicus. Linn _____ caudicans Gmel. Sys. Nat. .275 Falco rusticolus Gmel. Sys Nat. 1.268. White Jerfalcon Lath Syn. 1.83.84. Collored Falcon. Penn. Arct. Zool 7.222 Lath. Syn 1.56 Falco Gryfalco Gmel. Sys. Nat. 1.275 Falco Sacer. Gmel. Sys. Nat. 1.273 Buteo cinereus Daud. Orn 7.156 Falco fuscus Fab. Fauna Groenl 50 Le Sergant Buff Le Sacre. Buff Brown & Iceland Falcon Lath Syn 1.71. & 82 Greenland Falcon Lath Syn. Suppl. 18	Country	Presented by

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